CHAPTER III
EVOLUTION OF EMPLOYER-PROVIDED EDUCATION, 1865-1914

Employer-provided education emerged as a management strategy as workplaces became industrialized following the Civil War. As the operations of business organizations became increasingly larger with changed manufacturing processes, managers had difficulty obtaining an adequate supply of employees both acclimated and trained to produce in their new workplaces. To solve this problem, they turned to education, primarily providing their own educational programs in four areas -- basic education, job skills and knowledge, general and personal development, and professional advancement and development. This in turn led to the emergence of a new practice and the subsequent development of professional organizations in the period between the Civil War and World War I.

EMPLOYERS TURN TO EDUCATION TO MANAGE CHANGING WORKPLACES

The application of technological innovations produced fundamental changes in factory environments and employee-employer relations. Business enterprises were not only growing in size, but they were also changing production processes and adding new functions. These changes created the need for employees who could not only adjust their behavior to disciplined, impersonal work environments but who also had the willingness and ability to either adapt existing skills or to learn new job skills (Beatty, 1918, p. 6; Chandler, 1977, pp. 240-314; Haynes and Jackson, 1935, p. 105). Newly created functions created positions frequently requiring employees with specialized skills rather than all-round expertise and those with knowledge to fill new administrative, distribution, and marketing positions (Beatty, 1918, pp. 19-20; Fricke, 1982, p. 574; Hounshell, 1984).

Employers and employees, as they were brought together in the changing work environments, were faced with tremendous challenges and adjustments. Managers and supervisors, who were not far removed from their workers, were faced with organizing and managing workers who were not only unfamiliar with but also frequently resistant to the physical and cultural demands of the new work environments. Management subsequently turned to education as a tool to create and shape workforces to fit their particular behavioral criteria and skill requirements.

Employers and Employees Face New Work Environments

Workplace changes accompanying the introduction of industrial technology included the movement toward larger, increasingly dangerous workplaces, impersonal employer-employee relations, changing business structures, new job requirements, and changing demographics in the workplace. This expanding and changing industrial work environment put strains on both employers

and employees. To management fell the continuing difficult responsibility of putting together the technical and human components to create and maintain an effective, profitable operation. Managers had to find ways to coordinate production from a collective effort of workers who found themselves in unfamiliar work environments. The new, structured workplaces not only required employees to adjust to new types of specialized jobs with defined time and production requirements, but they were also insecure as to job mobility and frequently providing minimal stability (Korman, 1967, pp. 35-38).

Physical Working Conditions

There were great inconsistencies in physical working conditions. The majority of employers, seeing little connection between working conditions and production output, gave minimal consideration to even basic working conditions such as ventilation, lighting, heating, general cleanliness, washrooms and availability of drinking water, much less to hazardous conditions resulting from the new machinery and production processes. Manufacturers basic indifference was especially apparent in industries where the process resulted in heat or smoke or required a sequential process that made the conventional brick and timber structures inadequate. Many steel mill buildings constructed prior to 1895 had uneven dirt floors, low roofs and were either without adequate ventilation or were so loosely constructed as to afford inadequate protection against rain and wind for the workmen (Nelson, 1975, p. 14). A few employers, however, believing that production was affected by employee surroundings and employee morale, worked, although not unilaterally or uniformly, to improve the working environment. For example at Standard Oil's Baltimore refinery, washing facilities were not provided for employees until about 1915, while at their Bayonene works, the company supplied toilets, washrooms, and even lockers for the employees as early as 1903 (Nelson, 1975, p. 26).

Working Relationships -- From Personal to Impersonal

Not only were physical conditions changing within this new work environment, but the eighteenth century's highly personal, long-term employment relationships were being transformed (Jacoby, 1985, p. 5). Small- and medium-sized businesses which had proliferated in the mid 1800s had generally been small enough that the manager, who was the owner or an active partner, could know the majority or at least his older workers (Cochran and Miller, 1961, p. 230). This situation became less common as businesses applied technology to their production processes which encouraged rapid growth. Toward the end of the century tremendous expansion occurred as businesses merged and formed trusts to become more efficient and to eliminate competition (Cochran and Miller, 1961, pp 140-146; Davis, 1940, p. 28; George, 1982, p. 92). By 1914 most of the big companies, which accounted for three-quarters of the nation's industry, had expanded such that shops

with six to eight thousand employees were not uncommon in some industries, the Ford plant employing over fifteen thousand men (Cochran and Miller, 1961, p. 230). The result was that plant managers, much less absentee owners, could no longer maintain contact, much less a personal relationship with their employees.

Evolving Business Structures

The growing incidents of mergers and consolidations (1897 to 1907) not only encouraged rapid expansion and growth, but it also changed the structure of many business organizations (George, 1982, p. 106; Faulkner, 1951, pp. 153-54). Prior to World War I General Electric and DuPont had perfected the centralized, functionally departmentalized business form, which would be used by modern businesses. With the development of these hierarchical structures of authority came additional changes for workplace participants. Workers generally learned only a relatively narrow aspect of operations rather than having a broad view of a small firm as they had in the past; and, lower level managers, known as minor executives, were needed to supervise growing numbers of semi-skilled workers (Davis, 1941, pp. 28-50; Lescohier, 1935, p. 270). Larger businesses' power increasingly became concentrated at the level of ownership and senior management; but, even though workers were brought together in single buildings, there was division among them based on such factors as ethnicity, region, religion, race, age, sex, and skill levels and jobs (Korman, 1967, p. 3; Ross, 1985, pp. 135-140; Zunz, 1982, pp. 218-239).

New Jobs and New Skill Requirements

As old skills were eliminated or outmoded when machines were introduced or the subdivision of operations took place (Dubovsky, 1985, pp. 4-5), new skills and trades were created (Brody, 1980, p. 265; Kirkland, 1961, p. 265). Although occupational classifications were neither precise nor rigid (Korman, 1967, p. 39), the proportion of workers described as unskilled tended to decline and the number of workers classified as semi-skilled expanded. Semi-skilled jobs required some intelligence and education and a certain amount of specialized skill to operate the new machinery and to perform the routine, tedious tasks created by the greater divisions of labor and reorganization of production. These jobs, which included the textile weaver, a garment worker, or assembly line laborer, increased to form the largest proportion of manual or blue-collar labor (Brody, 1980, pp. 3-7; Dubovsky, 1985, pp. 4-5; Ross, 1985, p. 97; Kirkland, 1961, pp. 404-405).

Technological and managerial changes eliminated or diluted many traditional skills, but they never totally abolished the place and influence of the highly skilled worker. Although some older trades existed only as divided or specialized tasks, industry demanded increasing numbers of highly skilled machinists, toolmakers, and other sorts of skilled workers in metals (Lescohier, 1935,

pp. 270-271). Skilled workers, while they ceased to be production workers, became ancillary to production. The same machines which needed a semi-skilled worker to learn only a specialized task, at the same time required machinists to repair or replace them. This portion of the labor force defined as skilled, irreplaceable and autonomous, what some have called the aristocracy or factory artisan, held constant at about fourteen to eighteen percent during this period. Although craftsmen had to work in more structured settings under tighter forms of discipline utilizing a narrow range of skills in their daily work procedures, they maintained more independence and authority than less skilled workers (Dubovsky, 1985, p. 5; Kirkland, 1961, p. 338; Ross, 1985, pp. 114-140). Even so, this loss of pride of craftsmanship and the pleasure derived from creative work meant that many employees lost ownership and interest in work (Brody, 1980, p. 8; Davies, 1982, p. 3).

Changing Worker Demographics

As a new class of worker emerged for the industrializing work environments, he was being uprooted from familiar settings to urban areas where industry was located. Although the general population still clung to their old belief that industry was an inferior way of life to agriculture (Kirkland, 1961, p. 163), they migrated to the cities in large numbers in the decades following the Civil War. While 51.6 percent of the gainfully employed worked in agriculture in 1870, this number had declined to 37.7 percent by the turn of the century. Between 1880 and 1900 the number of nonagricultural workers more than doubled and rose proportionally from 48.4 percent of the nation's gainfully employed to 59.6 percent (Cremin, 1988, p. 470).

The growth of urban centers was made up not only of migrants from the farms but also immigrants from other lands. The population of the United States was increasing during this period; and, the number of foreign born as a percentage of the total population was also increasing, settling in large urban centers where it greatly altered the character of the working class (Daniels, 1958, p. 125; Dubovsky, 1985, p. 10). Although American employers frequently depended upon immigrants' know-how and skill during the late 1800s, foreign laborers also did rough, heavy, disagreeable work partly because of their pressing need for a job and also because of the absence of industrial experience (Erickson, 1957, p. 276; Kirkland, 1961, pp. 326-327).

All of these changes resulted in business continually acquiring power and control over workplaces. Although labor resisted by joining unions, strikes, and resistant behavior in the workplace, business was unstoppable. Modern business enterprise became the most powerful institution in the American economy and its managers the most influential group of economic decision makers (Chandler, 1977, pp. 377-483; George, 1982, p. 107). This increasing power and influence gave business tremendous latitude as to their management methods and solutions. Nevertheless, they were faced with tremendous challenges as they looked for new solutions to management, which were necessitated by the unparalleled changes in the industrializing workplaces.

Employers Challenged to Manage New Workplaces

Although business possessed tremendous power, professional management as an institution was only beginning to evolve. The enlargement of the scale of operations and new production processes, which created the need for orderly, efficient, and impersonal forms of employee control, created a tremendous challenge for managers (Galambos, 1966, p. 45; Chandler, 1977, pp. 14-17). Not only were employees being compelled to conform to industrial discipline unlike that they were accustomed to on farms in America or Europe or in artisan employment, but managers were finding themselves in new roles. A new form of management was evolving with the advent of middle management. Individuals with no financial interest in the organization were responsible to the owners for finding a way to manage operations with utmost efficiency in a new and changing industrial work environment (Kirkland, 1961, p. 336; Nelson, 1975, pp. 42-43). Their experience and frame of reference was what they could observe from their peers and what they knew and brought with them from their former experience.

Little discussion of management problems occurred prior to the Civil War, even large concerns still using the same methods of management within their shops as they had in earlier decades. Management methods developed slowly, the prevailing belief being that existing methods were efficient and suited to existing conditions (Korman, 1967, p. 65). Lescohier reports that the Technology Division of the New York Public Library found that prior to 1881 there were no American titles on management; in the twenty years from 1881 to 1900, only 27; and, in the following ten years, 240, with a rapid increase thereafter (1935, p. 303).

Early Management Ideologies

Conscious or unconscious, the prevalent management ideology of the time was generally authoritarian or paternalistic, the same system and style which had long been used in this country by agricultural entrepreneurs, farmers, heads of households, early shop owners, and apprentice masters. These long-held belief systems supported business owners and management actions, not only when they assumed complete control of the work environment and how workers worked but also when they became involved to a great extent in how their workers lived.

The Civil War effort influenced the make-up and organization of business enterprise, a precedent for management being the militaristic type of management practice. Businesses were not only autocratic, regulating conditions of work, compensation, and production, but also expecting unquestioning obedience from employees, a concept which ignored the human element (Cochran, 1957, p. 123; Hicks, 1940, p. 36). Military analogies were drawn with the handling of workers -- knowing where to draw the line between comradeship with men and respect for superiors, keeping the line taut, a trained human force with absolute faith in their superior (Kirkland, 1961, p. 337).

Following the war it was frequently considered good business to have a former military general at the head of companies, and contemporaries repeatedly made analogies. They referred to management as the captains of industry as opposed to laborers, those who would remain privates in the industrial ranks (Cochran, 1957, pp. 33, 337).

Management's emphasis in the *laissez-faire* era following the Civil War was primarily production oriented -- concentrating on the mechanistic or technical side of operations to achieve a profitable organization (Milton, 1970, p. 1). Foremen, production managers, and plant superintendents had a manufacturing or production orientation, their major concern to get out the product as quickly and cheaply as possible. They consequently looked for quick results and maximum flexibility. The workforce had to adjust to changes in technology and to fluctuations in output, never the other way around. Business favored strict discipline for the worker, believing that he was lazy, grasping, and untrustworthy. In contrast, employers believed that they themselves were free from the restraint of rules and commitments and that they had no responsibility for the worker other than paying the going wage rate if necessary (Jacoby, 1985, p. 6).

The *laissez-faire* philosophy of managing employees gave managment absolute dominance (Vreeland, 1906, p. 507; Kirkland, 1961, p. 337). Inside the late nineteenth century factory, where foremen were in charge of production, they had almost absolute control over labor, including hiring, disciplining, firing, and training. They frequently handled their men in crude, casual, dictatorial ways, known as the 'driving method'. Utilizing the rough and tumble methods they had learned from their own experiences, the foreman or 'little boss' considered his word to be law, his having virtually absolute control over the workplace. The driving methods of the foremen prevailed because central management was indifferent, their emphasis upon constantly increased output with constantly decreasing costs (Brody, 1980, pp. 9-10; Clawson, 1980, pp. 126-130; Cochran, 1957, p. 292; Korman, 1967, pp. 61, 63).

Innovative Management Systems

Toward the end of the century employers used various methods to gain control over workers and manufacturing processes, including adopting new systems of management. Systematic record keeping, cost accounting, and other controls came into use as production processes extended across decentralized systems. The workingman found himself increasingly subject to general rules and standardized working conditions as opposed to the whims of foremen (Brody, 1980, pp. 10-11). Companies took advantage of the new technology to take control of the work routine. They became increasingly concerned with cutting labor costs and experimented with new means of wrestling control over the labor process from skilled workers (Reich, p. 45; Ross, 1985, p. 98). They exploited technology to increase productivity and profitability by eliminating skilled workmen and replacing them with semi-skilled machine tenders and unskilled workers who were easily replaceable (Green,

1980, p. 11). They increasingly abandoned artisan-controlled apprenticeship programs in favor of teaching young workers only one or two particular skills and limiting power of their workers by transferring control of production to management-appointed supervisory tradesmen.

Henry Towne, president of the Yale and Towne Manufacturing presented his basics of how to avoid giving workers an issue to organize around. Cited as a progressive innovation, Towne described how his organization divided workmen into small groups in separate rooms to observe the operations of each group and to decide upon possible reductions in piece-prices paid to workmen. They consequently changed the prices paid to one group at a time, affecting only a few workers at one time (Clawson, 1980, pp. 183-184).

Inside factories, management created division among workers when they accepted and preserved ethnic stereotypes. For example, the patterns of ethnic stereotypes in Milwaukee created a clear pecking order for immigrants from central Eastern, and southern Europe -- Germans being at the top, Poles next, and last, Italians, Hungarians, and Greeks. Preserving this pecking order assisted at least to some degree in keeping peace in the workplace (Korman, 1967, pp. 42-44, 66).

Business's growing interest in improving the internal management culminated in the efficiency movement of the 1890's and early twentieth century (George, 1982, p. 93). Frederick Taylor's book *The Principles of Scientific Management* crystalized the efficiency movement, defining it to mean not only stop-watch methods of regulating body movements but also the careful selection of men and their scientific education and development (Montgomery, 1987, pp. 14-15). Scientific managers attempted to control each step of the work process by dividing each step into small tasks that could be studied and timed. Engineers planned each worker's job in advance and provided instructions on exactly how the job should be done. Management could thus control each step of the work process depriving workers of all decision making. In practice, the benefits of Taylor's philosophy flowed largely to management. Where scientific management was implemented, it accelerated the pace of work, reduced workers' remaining authority over their jobs, and provided no commensurate increase in material rewards. This explains workers' resistance to scientific management and employers' desire to introduce Taylorism (Dubofsky, 1985, pp. 85-86). At Simonds Roller Bearing Machine Company, which hired Taylor as a consultant (1897), all of the foremen resigned when Taylor set up a planning office. The installation at the Waterford Arsenal (1911) resulted in a massive walkout by skilled machinists supported by a number of the arsenal's foremen. Although Taylor's influence was enormous, the practical application of scientific management was only a modest success.(Brody, 1980, pp. 12-13; Jacoby, 1985, pp. 46-47).

The employer-employee relationship became increasingly adversarial. Skilled workmen attempted to defend their job control against scientific management through alliances with unskilled and other craft unions, and management struggled to gain more control over diverse work forces (Green, 1980, p. 68). The use of new management control strategies in the 1910s escalated the

struggle for control in of production. Piece rates were used more and more frequently, along with other incentive systems, to combat the job control workers exercised informally and formally through union work rules (Green, 1980, pp. 69-70).

Only very slowly, and rarely before 1900 had it occurred to American employers that the management of labor might yield itself the kind of returns that were being extracted from technology (Brody, 1980, p. 9). Although factories and industries had experienced unparalleled growth, there had not been similar development in human relations. The emergence of the modern corporation following the turn of the century involved the creation of a professional group of engineers and managers who attempted to increase labor stability, productivity, and efficiency. When workers resisted, some employers experimented with applying new social science disciplines like psychology and sociology in their struggle to gain control over the labor process (Braverman, 1974). When these methods did not prove satisfactory, they sought other solutions, including providing employee training and education.

Employers See Education as a Solution for Labor Problems

Changes in the workplace necessitated an increased supply of employees with the requisite skills. Although private individuals, workers' groups, state and federal governments, and various others apart from the workplace were experimenting with forms of industrial education, business enterprises found the existing labor supply ill-prepared and inadequate for their needs. The business perception was that workers lacked the appropriate technical skills and knowledge and were without the ability to adapt to their workplaces. Employers' provisions for worker education evolved largely in response to their perception of the need to close this gap between their vision of the personal attributes and skills required by workers to effectively behave and produce in their particular workplaces and the condition of existing employees and the general labor supply.

A corporation was created for a definite purpose -- that of earning dividends; and, the administrators of the corporation had the responsibility of seeing that the corporation received the best return on the investment. Because the efficiency of the corporation depended upon the efficiency of its employees; anything the corporation could do to make employees more competent vocationally, physically, or mentally improved the efficiency of the corporation. This was how corporations justified the expenditure of corporations' money in the interest of stockholders (NACS, 1914, pp. 606-607).

Employers experimented with and developed different methods of training and education for their employees. As with the unrestrained expansion and growth of business, there were few restraints and no set pattern which could be applied to employer-provided education (Licht, 1991,

pp. 43-73). Although larger organizations such as railroads and manufacturers normally had greater resources at their disposal, other factors such as the availability of workers and the ideologies and dispositions of business owners influenced education-related decisions.

Business provided the work place education they offered and frequently attempted to influence external educational programs, which other private and public institutions were developing. Although they at times collaborated with external educational efforts, business primarily sought to retain control by providing their own educational programs.

Employer-provided training and education developed in four distinct, job-related areas. Basic education contributed toward the acclimation of employees into the new industrialized workplaces; job training and education provided specific job skills and knowledge for particular jobs; general education encouraged the personal development and character building of workers, intended to enhance their job performance; and, professional development provided the knowledge and expertise to enable existing workers to assume additional responsibilities in their current jobs and to advance to positions of greater responsibility.

BASIC EDUCATION -- ACCLIMATIZING WORKERS

Business viewed basic education programs, intended to provide the rudimentary skills and behavior necessary to adapt to and perform in the workplace, as an answer to managing increasingly larger, impersonal workplaces with growing numbers of employees unaccustomed to and ill prepared for the new cultural and physical work environment. Basic education during the fifty years following the Civil War included programs with a social theme which not only encompassed the work environment but extended to virtually all areas of employees' lives.

Initially business attributed basic education efforts to their concern for the lot of the worker. Undoubtedly, however, they must have felt pressure from the growing labor movement and increasing public awareness and interest as moralists and reformers became more vocal. And, following the turn of the century, they had to rationalize their management as government became involved and any existing control of industry passed from the more benign local governments to state and national involvement (Nelson, 1975, p. 61).

Employers Provide Educational Programs with a Social Theme

Cost conscious businessmen, increasingly beset with increasing employee lethargy, absenteeism, insobriety, and rapid job turnover in the decades following the Civil War, looked for a way to indoctrinate workers into a new way of life, one virtually controlled by their employer. Businesses, consequently, began to experiment with educational programs providing services for the comfort and improvement of their workers intended to acclimatize them to factory discipline and to integrate their lives with that of the corporation (Brandes, 1970, pp. 1-9; Nelson, 1975, p. 101).

This was not the first time that employers had taken such steps. This type of work dated as far back as Robert Owen's experiment in England and the efforts of the Lowell cotton mills to supervise the living conditions of their operatives. Writings on welfare capitalism had begun to appear in the 1830s, one of which was James Montgomery's *The Theory and Practice of Cotton Spinning*. Mill owners were cautioned about labor relations and the importance of creating a good feeling and understanding between managers and workers (Lapiappe, 1988, pp. 219-226). Although isolated experiments had been undertaken since the beginning of American manufacturing, the practice was not general enough to attract attention until the closing decades of the nineteenth century (Lescohier, 1935, p. 316).

Program Definitions and Labels

These voluntary efforts of paternalistic employers were generally based upon a blending of the premises, conscious or unconscious, that a worker did not know what was best for him and that he was not fully capable of getting those advantages for himself. Employers also believed that such provisions would attract and hold better workers and make them more efficient (Herring, 1929, p. 376).

The 1904 Conference on Welfare Work sponsored by the Welfare Department of the National Civic Federation (NCF) defined this form of worker education as involving, " . . . especial consideration for physical comfort wherever labor is performed; opportunities for recreation; educational advantages; and the providing of suitable sanitary homes: its application to be measured by the exigencies of the case" (Beeks, 1904, p. v). Welfare work was further described by the Welfare Department as a duty and not a favor on the part of employers to provide for the physical, mental, moral, and social welfare of their employees (NCF, p. 260). At the second annual convention of the National Association of Corporation Schools it was described as, " . . . all activities on the part of the employer, which may contribute to the comfort and welfare of the employee or his family" (NACS, 1914, p. 628).

Gertrude Beeks, secretary of the Welfare Department of the National Civic Federation, stressed the importance of business's approach and attitude toward welfare work, "The spirit of welfare work must not be that of condescension . . . nor rob the worker of self-respect . . . . Going to the other extreme, the so-called democratic plan, is also to be avoided. When their confidence is to be gained, employees will generally prefer to entrust the direction of welfare work to the employer" (Beeks, 1904, pp. 5-6).

These varied educational initiatives carried numerous labels. Early programs were generally identified as welfare activities, welfare work, welfare programs, welfare management, and welfare capitalism; toward the close of the century, industrial betterment, betterment work, and social service;

and, following the turn of the century, service work or social engineering (Korman, 1967, p. 77; Proceedings of the Employment Managers' Conference, 1917, p. 13).

Business Rationale for Providing Programs

Employers' motivations for providing welfare activities for their employees were extremely varied. Employers promoted welfare programs as investments in a more efficient and productive workforce. There were some examples where social commitment and a more humanitarian philosophy, that those entrusted with industrial leadership were obligated to do all in their power to improve working and living conditions for employees, was at least expressed as the rationale for these programs. Other motivation included the increasingly impersonal quality of employee-employer relations; employees' negative attitudes toward the introduction of new machinery; difficulty attracting and retaining a labor supply; and, an apparent decline of employee loyalty (Seligman, 1934, p. 396; Nelson, 1975, p. 101; Boettiger, 1923, pp. 4-12). Although some firms admittedly saw welfare activities as a way to avert or combat unionism, welfare activities were characteristic of some companies which recognized unions (Lescohier, 1935, p. 316). Other firms regarded welfare activities as good advertisement or a way to mitigate public opinion regarding undesirable business practices such as long hours and low wages (Seligman, 1934, p. 396; Benson, 1986, p. 145; Dubofsky, 1985, pp. 87-88).

Whatever the motives, employers showed remarkable ingenuity as they interpreted and implemented their convictions (Nelson, 1975, p. 101). Some employers examined the work environment and instituted such measures as reducing hours and improving factory interiors and exteriors; others made provisions for employees' homes, health, and sanitation; others adopted safety, medical and relief measures; while still others instituted recreational and educational programs for work and personal development for both employees and their families (Brandes, 1970). One employer, the Carnegie Steel Company divided their welfare work into two general classes, first-class activities pertaining directly to the employee and second-class activities pertaining directly to the home life of the family (Burnett, 1914, pp. 628-631). Still other employers, although disclaiming welfare work, provided the same benefits to employees. Such an organization, the Chicago Telephone Company which employed about 500 women at the turn of the century, provided lunchrooms, hospital rooms and a nurse, a choral society, and a benefit association (Goss, 1911, p. 18; Shuey, 1900, p. 115).

Providers stressed the value of this work in both large and small establishments but contended that the work in one organization could not necessarily be applied to that in another, that only special features could be adapted to the special conditions in a particular concern. Companies used the same features with different rationales in the same time period and in different time periods. For example, a company lunchroom could not only served nutritious, cheap meals, but it could also give workers quick service so that they could return punctually to work (Benson, 1986, p. 145). The various motives applied to different activities brought about a variety of results (Nelson, 1975, p. 103). Factory girls were often forced to rest on the floor of washrooms because restrooms were for the

office force only; compulsory dental work sometimes followed a gratuitous examination at the company's expense; a common towel and drinking cup were used in factories which boasted of otherwise clean and pleasant surroundings; and, libraries were installed in factories where most of the employees, many immigrants, could neither read nor write (Lescohier, 1935, p. 317).

Evolving Programs

The National Cash Register Company (NCR) and Heinz & Co. are frequently cited as leaders in providing welfare programs (Nelson, 1975, pp. 106-111). These innovative pioneers experimented with various programs. Descriptions of their welfare work, as they reported them, are listed in Table 1. These early developers of welfare programs, although frequently random responses to unsystematic suggestions, encouraged growth and development of welfare activities by providing models for successors' programs. They became the pacemakers, laying the groundwork for the later growth of personnel management (Korman, 1967, pp. 76-77).

Table 1. Pioneering Welfare Programs -- 1865-1900

Company	Work Conditions and Environment	Recreational and Social Activities	Safety, Health & Relief Measures	Education
H. J. Heinz Co. Pittsburg - Foodstuff factory - Primarily women employees - Program began prior to 1888 - Labeled Industrial Betterment Philosophy: 'Better care of factory meant better care of employees' (1)	- Sanitary conditions - Lighting & heating - Uniforms and manicurist for nails of women employees - Dressing room with wooden lockers - Shower and tub baths with soap & towels provided - Dining room & roof garden for lunch hr.	- Auditorium seating 2500 for entertainments, lectures, social occasions and concerts - Annual picnic and outings to river - Piano - Paintings in dining hall - Company gymnasium and swimming natatorium - Vaudeville shows, lectures, and dances	- Free medical care - Emergency hospital with 2 beds & free services of on-call physician - Sick and benefit association - Eden Hall Home -- 375 acres -- combined convalescent home and vacation resort for Heinz employees and alumnae	- Reading room - Company magazine "Pickles" - Classes in cooking, dressmaking, millinery, cooking, freehand and voice - Instruction in American citizenship - Suggestion box awards
National Cash Register (NCR) Dayton - Program began in early 1880's - Special attention given to women (2)	- Beautified factory exterior - Lighting and ventilation - High back chairs & foot stools for women - Women's area with curtains, pictures, plants,, quotations - Shower baths (men) & tubs (women) - Reduced work hours - Women's lunch room - Meals at cost	- Tennis courts and baseball fields - Advance Club Hall open to employees & people of neighborhood for factory clubs, pleasant Sunday afternoons, and Agents training school - Men's & Women's Welfare Leagues - Women's Century Club - Boys Club	- Concern for health of employees - 4-room hygiene department under charge of physician - Pre-employment physical - First aid - Relief association	- Free lectures - Free libraries - Quarterly magazine - Education plan with evening classes - Instruction for women in sewing, housekeeping - Apprenticeship

(1) Alberts, 1973; Beeks, 1904; Employers' Welfare Work, 1913; Shuey, 1900
(2) Beeks, 1904; Crowther, 1923; Employers' Welfare Work, 1913; Shuey, 1900

H. J. Heinz was an early leader in welfare programs. He supplied uniforms, made his factory 'the cleanest place on earth', provided dressing rooms, washrooms, lockers, and a roof garden for lunch hour strolls for women workers. He hired Aggie Dunn, known as 'Mother Dunn' as, perhaps, the first welfare secretary (Kryder, 1985).

The National Cash Register explained the reason for their welfare work in an early company bulletin: "In 1892 registers worth over $50,000 were returned because of defective workmanship. We decided that more interest would have to be taken in our employes [employees] to make them better workers and we started welfare work and found that it paid in a better product" (Lescohier, 1935, p. 319). John Patterson, President, had experienced strikes and even attempts to burn the factory building. But, when the shipment of cash registers sent to England was returned because of

poor workmanship, he decided to take action. Patterson built a new factory which was well lighted, clean, and well ventilated. He changed managerial hierarchy, abolishing the position of superintendent and creating a decentralized committee system. Patterson then undertook to provide for employees in virtually all areas of their lives (Crowther, 1923, pp. 190-207). To oversee these activities he hired a local woman, Lena Harvey, in 1877, who had been a deaconess. Several years later when a strike occurred, Patterson re-evaluated his methods. Although vestiges of the driving system had precipitated the dispute, not the welfare programs, Patterson took the opportunity to ease Harvey out and discontinued many of the activities.

Edwin Shuey's handbook (1900), *Factory People and Their Employers*, revealed how at least eighty United States employers, prior to 1900, provided for the sociological development of their employees through various welfare programs. Intended as a guide for employers, Shuey included information on the reported benefits of the programs and how employers should begin their implementation with working conditions and beautification of the external factory (1900, pp. 39-78). He stressed how an attractive, clean factory exterior was a 'constant object lesson' for employees and that factory interiors providing an abundance of light, pure air, clean rooms, windows with curtains and walls painted with restful colors, especially in women's areas, would improve moral conditions. Other features considered as part of betterment work included physical examinations prior to employment, small dispensaries, baths and lockers, toilet rooms, chairs and leg rests, ice water, lunch rooms. pensions and savings plans, and housing and company towns (Shuey, 1900, pp. 38-128).

The early years of the twentieth century experienced the conscious development and expansion of new types of welfare measures. (See Appendix D.) Model programs included those of International Harvester, and Filenes which are depicted in Table 2.

Table 2. Exemplary Welfare Programs Following Turn of Century -- 1900-1914

Company	Work Conditions and Environment	Recreational and Social Activities	Safety, Health & Relief Measures	Education
International Harvester Chicago - Manufactures machine shop products - Regular department organized about 1913 - Superintendent and assistant in charge - Plant supervisors from 20 plants form advisory board to promote welfare work - Actively collects information on other manufacturers' welfare programs (1)	- Sanitary factories - Proper heat, ventilation, and toilet facilities - Shower baths where necessary - Washrooms with matrons for women - Soap, towels, and lockers - Pure drinking water - Lunch rooms	- Clubhouses with recreation centers, ladies rooms, reception hall, smoking room, pool room, bowling alley, gymnasium, assembly hall - Pianos and graphophones in rest rooms - Annual picnics - Entertainments and dances - Baseball teams, tenpin clubs, athletic associations - Foremen have club to promote social life	- Two physicians in emergency hospitals and, where necessary, nurse - Fire escapes - Industrial accident insurance - Employees' benefit association - Old-age pensions	- Apprenticeship program - Deposit station of Chicago Public Library - *Harvester World*, employee monthly magazine
William Filene's Sons & Co. Boston - Department store - Company purports that it has nothing to do with welfare work--that it differs fundamentally from usual betterment work in that employer is not involved in any way (2)	- Health Committee cares for health of employees - Lunch room - Rest room - Medical room with company-paid nurse in attendance	- Entertainment Committee in charge of social gatherings of members - Athletic Committee furthers athletics and gymnastics - Smoking room with tables and games for men - Dancing room - Choral Club - Basketball teams - Classes in dancing	- F.C.A. Insurance Society for disability and death benefits	- Work accomplished through association of employees – Filene Cooperative Association, of which Every employee is member

(1) Employers' Welfare Work, 1913; Goss, 1911
(2) Beeks, 1904

International Harvester was a model in that they did not consider welfare benefits to be a substitute for higher wages, lower hours, or the union as a bona fide bargaining agent (Korman, 1967, p. 87). Although they began with the idea of having an inexpensive program that would least disturb their production managers, positive, unintentional bi-products resulted when the deliverers, being subordinate to production, not only educated the superintendents and foremen, but involved them in the programs. Progressive companies, like Harvester, pointed the way for developing and expanding welfare programs which could take in the innovations demanded by progressive reformers following the turn of the century (Korman, 1967, pp. 73-75, 82; Gladden, 1876, pp. 166-186; Commons, 1964, p. 316).

Diana Hirschler, who began as Social Secretary of Filene's welfare program, indicated that the work was started (1901) based on two premises -- that "just conditions should be established to enable employees to do their best work and . . . that employees were not giving their best efforts to their work, and that there should be someone there to help direct and train them" (Beeks, 1904, pp. 26-27). The Filene Cooperative Association was formed, of which every employee was a member. Miss Hirschler contended that this employee organization elected the officers of the association, including herself, who were responsible for the welfare programs. Programs included classes and lectures, an insurance fund, a suggestion program, and social activities (Beeks, 1904, pp. 26-40).

Standard procedures and activities for welfare programs were not spelled out, even following the turn of the century. There was an increasing tendency, however, for employers to pay attention to ambitious programs considered 'best practices' (Fleisher, 1917, p. 56; Nelson, 1975, p. 106). Gertrude Beeks, the Secretary of the Welfare Department of the National Civic Federation (1904) provided a welfare secretary consultation service, maintaining a central bureau for the exchange of information about the practice. A network of welfare workers exchanged information about their various practices. Welfare secretaries made annual tours of other companies to keep abreast of new developments. Prior to building a new plant, Western Electrical Instrument sent an employee on a year-long tour to inspect others facilities (Brandes, 1970, p. 18; Jacoby, 1985, p. 59; Tracy, 1950, p. 69; Meakin, 1905, pp. 85, 114; Strom, 1992, p. 122).

Determinants of Various Welfare Programs

There were some general determinants which led companies to favor particular programs. One, the composition of the labor force was a primary factor in determining which welfare features companies adopted. Education for special groups, such as women and ethnic groups, was limited to employers' perceptions of employees' capabilities (Korman, 1967, pp. 67-69). An employer of a large mill expressed concern over the employment of women commenting that he was certain that, " . . . working in one of these mills for five or six years practically destroyed the womanhood of every employe [employee]" (Shuey, 1900, p. 113). As a result, employers, feeling that women were especially sensitive to their surroundings and more responsive for what was done for them, provided special programs for women. Programs included reduced hours and changing women's hours so that they arrived and left work at different times than men; Saturday holidays, a week's vacation and recesses during the day; lunchrooms, restrooms and decorative features; and, other amenities as laundered white aprons, sleeves and caps to assure that a woman worker did not sacrifice her femininity (Nelson, 1975, pp. 117-118). While employers emphasized what they considered were humanitarian considerations for the maintenance and development of womanhood, they were in fact able to hire a higher class of women at lower wages than they would have to pay men (Shuey, 1900,

p. 115). At the same time, women who were considered to be a secondary wage earner and probably transient were normally not offered pensions, savings programs, and insurance plans, as opposed to the case where most of the workers were men. In that case manufacturers put the emphasis on financial security and recreation rather than comfort (Shuey, 1900, pp. 44-47; Nelson, 1975, pp. 115-118; Beeks, 1904, p. 75).

Another consideration for determining the type of welfare program was the location of the factory or workplace. In a rural or isolated area the emphasis would be company housing, club houses, recreation centers, athletic programs, adult education and assistance to churches and schools; but, if the factory was located in a city, the situation was probably reversed. Because urban employees generally had access to libraries, social clubs and other recreational activities, business offered cafeterias, rest rooms, medical departments and insurance and savings plans (Nelson, 1975, pp. 116-117).

Employers and External Providers

The Young Men's Christian Association (YMCA) became involved in welfare work during the 1870s through its religious activities with railroad workers. They set up special centers to hold prayer meetings and Bible classes for railroad stations across the country. By the late 1880s YMCA programs had become more secular, and the centers contained game rooms, libraries, lunch rooms, infirmaries, bowling alleys, and gymnasiums. By the turn of the century there were more than ninety Railroad Association buildings. Each association was directed by a secretary appointed by the YMCA's national Railroad Department which was headed by Clarence J. Hicks, who later administered welfare programs for various Rockefeller concerns including Colorado Fuel & Iron Company and Standard Oil (Brandes, 1970, pp. 14-15; Hicks, 1940; Jacoby, 1985, p. 56).

The railroads, in order to provide wholesome facilities for their employees, encouraged the growth of the special railroad branch of the Young Men's Christina Association (YMCA). Although they occasionally built their own facilities, railroad executives preferred the YMCA facilities to their own. This preference was probably due in part to employees normally bearing a portion of the expense of YMCA provided facilities. However, railroad officials also sought to improve general working conditions, believing that well-housed, well-fed, clean, properly educated, Christian workers were less likely to strike (Brandes, 1970, pp. 14-15; Hopkins, 1951, pp. 228-234).

The YMCA eventually branched out of railroad work and began to organize welfare activities for industrial workers in cities and isolated areas. As with the early railroads, who first worked with the YMCA, employers supported these programs by contributing to Association buildings and programs (Shuey, 1900, p. 56, Beeks, 1904, p. 143). Employers would also willingly hire YMCA-trained secretaries to administer their welfare activities, but they were hesitant to turn their programs over to the Association. This was in spite of the fact that employers at the 1904 Welfare Conference Welfare Secretaries validated the successes of the YMCA. programs, even commenting that their

programs created less antagonism among the employees and that their professionally trained secretaries were an asset (Beeks, 1904, pp. 75-130).

Jane Addams was involved with the Young Women's Christian Association (1893) when they started a lunch room in the Western Electric Company, serving soup and coffee to the young women. Although at first hesitant, the company eventually permitted them to enter the organization; and, the successful project evolved into the Occident Club made up of girls from the factory, purportedly the first club in any factory in the United States (Shuey, 1900, pp. 63-66).

Employers during this period were not the first to support churches in their welfare work. Slater began by himself teaching Sunday School and later lent financial support to a community Methodist Church, believing that it would impose the importance of good work habits upon employees. Industrialized employers also saw Christianity as encouraging those qualities in employees which they found desirable -- temperance, frugality, honesty, discipline, industriousness, loyalty to the company, and independence from unions. One southern textile mill owner went so far to say that he preferred his workers uneducated but very religious. The company records of Procter and Gamble cite William Cooper Procter, "Christian brotherhood helps a man to fill up his obligations" (Brandes, 1970, pp. 70-71). Company control of the pastorate of churches could be financial or other. The company superintendent who taught Sunday school or attended services could by his very presence influence the pastor. The fact that a clergyman's church received a subsidy either of land, building, or other, could weaken his independence (Brandes, 1970, pp. 71-72). David Brody, in his study of the steel industry, contends that subsidization created a sense dependence that was sufficient to align clergymen and YMCA men with company interests (1960, p. 116).

Employers also cooperated with other external educational parties to aid them in their welfare efforts. The Fourth Annual Report (1881) of the New Jersey Bureau of Statistics of Labor described how the Whital-Tatum Company of Millville, New Jersey, helped the Women's Christian Temperance Union establish a club house for their furnace boys where the ladies met with the boys for reading, instructing, singing, and other activities (New Jersey, 1881, p. 131 in Nelson, 1975, p. 103).

Labor and Employers -- Conflicting Perspectives

While employers' testimonials publicly praised the programs (Shuey, 1900, pp. 197-201), labor frequently resisted welfare work, contending that the real motive was not good business, but rather business seeking advertisement or gaining favorable opinion, countering unions, or making up for low wages. Labor generally viewed the paternal relationship between workers and employers as creating an atmosphere of charity and patronage which was offensive to self-reliant workers (Boettiger, 1923, pp. 15-16; Lescohier, 1935, p. 319; Seligman, 1934, pp. 397-398).

Not only did the programs create inconsistencies among employees, but records of employees' reactions to welfare work reveal that at least some employees often criticized welfare programs as being a demeaning intrusion into their private lives. At a Maine textile mill a group of angry young female workers called the welfare secretary, "Sanitary Jane" when they told her that they were just as clean as she was and would not submit to her further examinations (Jacoby, 1985, p. 55). Workers also felt that their private lives were being invaded and violated when company nurses and socials workers visited their homes and advised them as to diet, family-budget, and personal, conduct (Goss, 1911, p. 23; Nelson, 1975, pp. 320-321).

In reaction to labor's resistance to the welfare programs, employers following the turn of the century, while stressing the objective of the programs as good business practice, began to use different labels (Benson, p. 146). The term ‘welfare’ became a "besmirched connotation" (Lescohier, 1935, p. 351). Bloomfield, a contemporary labor consultant, wrote, " 'Welfare' is the most unpopular word in the terminology of the factory worker" (1920, p. 326). A Joseph & Feiss Company welfare worker reported her company sought to, "eliminate absolutely all the hysterical elements and 'charity' phrases so often found dominating welfare work" (Eilbert, 1959, p. 351). Labor leader Gompers satirized the work as “hell-fare” (Beatty, 1918, p. 6).

Workers also were aware that the welfare programs had not been integrated into the management systems of the company (Nelson, 1975, p. 103). Since programs were undertaken for primarily business reasons, to operate business establishments efficiently, employers did not hesitate to abandon unsuccessful measures. Because there were no laws protecting employee benefits, a strike or other actions by employees could result in immediate termination of the benefits (Nelson, 1975, pp. 108-109).

Another contentious issue was control over the programs. Employers were virtually unanimous on the proper way to administer welfare plans, with few exceptions agreeing that they should control and direct the benefit programs. Even when the plans were largely or wholly financed by the employees, management generally intervened to ensure that they had a measure of control. Employers not only feared that unions would take control, but they normally introduced welfare work to people they considered incapable of making business decisions. One group, women workers, was perceived as being unable to make intelligent decisions (Nelson, 1975, pp. 114-115).

In response, unions, especially those whose workers followed the craft tradition of autonomy, organized their own programs rather than being a part of those controlled by the companies (Derickson, 1988, pp. 1-17). Union halls which were frequently the center of community life, hosted concerts, lectures, religious services and other events, and union-maintained libraries. In addition, unions, such as the hardrock miners emphasized political education during the formative years around 1900, sponsoring socialist lectures, debates, lyceum courses, and other activities (Derickson, 1988, p. 21). Beginning in the late 1800s, mine workers, who resented company-owned commercial

enterprises as a paternalistic infringement on their independence, worked to educate their members not to patronize company doctors, stores, or anything else of the kind. Rather they formed and administered their own cooperative grocery stores, boardinghouses, and laundries. This fraternalism helped to lay the ground work for self-help in health matters (Derickson, 1988, pp. 14-24).

No Consensus on Verdict

Business and their promoters publicly lauded the results, at least publicly, of their paternalistic welfare programs. At the 1914 Conference of the National Association of Corporation Schools, the Managing Editor of *100 Percent* promoted welfare programs: "Business has taken the big, broad stand that welfare work in all its phases . . . pays profits in real money producing a higher class of workmen who are paid more money for doing more and better work . . . . We can prove that it pays" (Briggs, 1914, NACS, p. 654).

Privately, businessmen were questioning the financial benefit of welfare programs, "anything that savors of welfare work is very likely to be regarded as out-and-out philanthropy" and "business is not a charitable institution" (NACS, 1914, p. 408). Employers reported that welfare programs were not necessarily attracting the workers they needed. The Supervisor of Apprentices for the Atchison, Topeka & Santa Fe Railway System reported that, although his company had spent millions of dollars upon welfare programs by building and maintaining free to employees clubhouses, recreation halls, free lectures and concerts, operas, etc., the programs did not bring skilled hands and brains to their shops (NACS, 1914, p. 304).

Safety and Health Programs

Prior to 1907, there seems to have been little consciousness of the employer's responsibility or the practicality of accident prevention. The accident rate was probably higher between 1903 and 1907 than any other time or place, the result of the unprecedented business activity and the large proportion of inexperienced immigrant labor in American industries. The combination of these two factors, with the absence of any organized safety effort, produced an unprecedented degree of frequent and severe accidents (Chaney and Hanna, 1918, p. 13; Lescohier, 1935, p. 366).

During the 1880s state and federal governments had made few efforts to pass protective legislation; and, even if passed, legislation tended to be passed haphazardly and enforced inadequately (Korman, 1967, pp. 110-113; Scranton and Licht, 1986, p. 23). Although a few companies introduced safety work prior to the advent of worker's compensation, most employers were driven to take up this activity only after the passing of legislation (Derickson, 1988, p. 193). The enactment of workmen's compensation laws from 1911 onward, which placed a portion of the financial costs upon employers, gave impetus to the rapid development of safety work (Dubovsky, 1985, p. 81; Lescohier, 1935, p. 370).

The years following the turn of the century came to be marked by steady advancement in the protection of workers' health and safety. A new and external force, the industrial safety movement (1907), lent compulsion to businesses' efforts, including education, to provide for workers' safety and health (Korman, 1967, p. 110; Lescohier, 1935, p. 366). Not only did numerous bureaus and commissions report upon workplace hazards (Schereschewsky, 1914, p. 294), but reformers publicized conditions and demanded measures to reduce industrial accidents (Green, 1980, p. 14; Korman, 1967, p. 115; Lescohier, 1935, pp. 359-365; Scranton and Licht, 1986, p. 23). Between 1907 and 1917, the increasing dissemination of information about safety work, workmen's compensation laws, increasing liberality of courts to injured workmen, and the vigorous campaigns launched by United States Steel, Chicago and Northwestern Railroad, International Harvester Company (Hicks, 1940, pp. 42-43) and other outstanding corporations, all promoted interest in the prevention of industrial accidents (Lescohier, 1935, pp. 367-369).

In September 1910, the Joint Board of Sanitary Control of the Cloak, Suit, and Skirt Industry of Greater New York, composed of employer and employee representatives, began the study of health conditions in clothing factories and shops, which both the unions and the manufacturers obligated themselves to maintain. This was the first time in American industrial history that an employers' association and a union worked to establish and enforce healthful working conditions (Lescohier, 1935, pp. 362-363). By the 1920's, union traditions of self-help had been undermined and in large measure eclipsed (Derickson, 1988, p. 190).

Nevertheless, new industrial technology, new machines running at higher speeds and with more power, toxic chemicals, and other technological advances resulted in the United States, before World War I, having one of the highest industrial accident rates in the Western industrial world (Dubovsky, 1985, p. 22; United States Department of Labor and Commerce, September 1910, p. 447). United States metal miners succumbed to occupational accidents at the average rate of 3.1 deaths per 1,000 employees per year from 1894 to 1908, and at the rate of 3.8 from 1911 to 1920 (Derickson, 1988, p. 37).

Labor Response

American industry and its gross negligence and systematic indifference toward worker safety not only subjected workers to avoidable safety hazards but also discouraged measures to improve conditions. Many employers would simply fire workers who made objections about safety hazards and, in order to protect themselves from adverse publicity, would refuse to allow outsiders into factories to view accident scenes. When workers subsequently participated in strikes to eliminate unsafe working conditions, federal and local strike statistics, undoubtedly the result of the powerful political influence of business, repeatedly understated the influence of safety factors upon strike activity (Asher, 1986, pp. 116-125).

Some labor groups took it upon themselves to provide for their own health and safety welfare. The Western Federation of Miners and other unions created and maintained health and welfare programs of their own because of the hazards of the job. Accidents crippled and killed countless workers while debilitating industrial diseases took a heavy toll. Industrialization exacerbated old risks and generated new ones. Miners came to one anothers aid in sickness and injury. They not only attempted to rescue co-workers on the job, improvising first-aid and ambulance services for their fellow workers, but they also disbursed disability benefits and provided medical services, including planning, building and controlling general hospitals. After the turn of the century, the Western Federation of Miners adopted a more aggressive health policy, shifting from coping with the effects of occupational hazards to preventing them. Increasingly, providing services and benefits gave way to political agitation for protective legislation (Derickson, 1988, pp. 28-56; 57, 70, 86-153).

Provisions in Welfare Programs

Although there was no consensus as to the value of providing for the health and safety of employees, from its beginnings welfare work in American industries had included more or less attention to safety and health problems. Promoters of welfare work contended that there was a correlation between many of their features and workers' health and safety. Attributing many accidents to the fatigue of workers (Derickson, 1988, p. 34), welfare workers suggested that sufficient rest, accomplished through shorter work days, rest periods at work, the opportunity for leisure and recreation, proper nutrition, and hygienic housing and working conditions indirectly contributed toward safety and health by eliminating fatigue and supporting a good attitude toward work (Asher, 1986, p. 123; Boettiger, 1923, pp. 187-207).

Some early employers placed emphasis upon the health of employees by providing company doctors and dentists, factory dispensaries with medicine, and other considerations for employees' health. By 1912, there were hundreds of physicians scattered throughout the country who had contractual relations with industrial firms, not only to take care of injured persons and to give medical examinations to employees (NACS, 1914, pp. 664-668), but also to supervise any related education and factory conditions (Lescohier, 1935, p. 364). Other employers continued to frown upon medical services believing that it caused employees to exaggerate their ailments and to think too much about themselves (Lescohier, 1935, pp. 318, 364; Korman, 1967, p. 123).

The relationship between health and safety and welfare programs aroused the suspicion of labor. Employers, prior to government involvement, were at liberty to extend their 'benevolent despotism' as they wished. Welfare work, whether it was working conditions such as proper ventilation and cleanliness, safeguards for machinery, or compensation for employees and their families for industrial accidents, was typically subordinate to production (Korman, 1967, pp. 110, 120-122).

While some companies employed physicians and contributed to injured or sick employees and others sponsored employee mutual benefit and relief associations, there was only minimal mention (Solvay Process Company's lectures on first aid) of early proactive educational measures specifically for accident provision (Shuey, 1900; Beeks, 1904). Lescohier contends that safety and accident prevention work, other than fire prevention, was almost non-existent until 1910. Exceptions were United States Steel Company, Westinghouse, and Baldwin Locomotive Works, who a few years earlier had adopted systematic means to prevent accidents by careful machine inspection (1935, p. 319). Allis-Chalmers organized a mutual aid society in 1883 to provide for welfare benefits, but it was not until later in the century after the explosion of an emery wheel killed a worker, that they set up a sick bay, obtained a horse-drawn ambulance, and distributed dustproof first-aid boxes throughout the plant. And, it was only after the turn of the century that they provided education, sponsoring lectures on infection and accidents (Korman, 1967, p. 72).

Expanded Safety and Health Education

To reduce the high number of accidents, company officials -- Sydney Ashe, General Electric Company and Robert Young, Chief of the Safety Department of the Illinois Steel Company – stressed (1914) the importance of educational work to solve the industrial safety problem (NACS, 1914, p. 646). Dwight Woodbridge, reporting for the Department of Interior, Bureau of Mines (1914), also contended that the chief element for preventing accidents was educating workingmen (NACS, 1914, p. 643).

The Pittsfield Works of the General Electric Company reported a successful safety campaign (1914), which was reportedly carried on in order to obtain the cooperation of workmen in preventing accidents. The program included a system of weekly records of accidents distributed to departments, followed by 'friendly' departmental contests, lectures, and safety bulletins. If this educational work did not improve a department's safety record, the company immediately instituted rigid discipline, which they reported as instantly improving the situation (NACS, 1914, p. 652).

The iron and steel industry was credited with the first comprehensive effort to organize an entire industry (Palmer, 1926, pp. 9-12). The United States Steel Corporation was a widely-publicized leader in industrial safety work, their appointing committees in 1906 to systematize and standardize the safety, sanitation and welfare work of their subsidiary companies. The work of these committees developed to such an extent that they became centralized in 1911 with the establishment of the Bureau of Safety, Sanitation and Welfare. The bureau manager devoted his entire time to a wide-ranging program of inspection, education, administrative reform, and technological change. The company reported in 1914 that serious and fatal accidents were less than one half (40.52 per cent) of what they were in 1906; and, by 1927, the rate had declined to 19.7, a drop of nearly 74 per cent from

1910 (Boettiger, 1923, pp. 128-129; Close, 1920, pp. 6-13; Derickson, 1988, pp. 192-193; Lescohier, 1935, pp. 367-368).

Chicago and Northwestern Railroad was the pioneer in organized safety work in the transportation field, their particular contribution being the effectiveness of safety committees. After studying their statistics and records of accidents (1910), they set up safety committees composed of various men and railroad officers who continuously inspected their respective areas for danger and recommended safety measures (Lescohier, 1935, pp. 368-369).

Other success stories include those of International Harvester who reported a 16 per cent reduction in accidents from 1911 to 1913; Fairbanks Manufacturing Company of Beloit, Wisconsin, claiming that in 1912 the time lost through accidents was 76 per cent less than in 1907; and Delaware and Lackawanna, the first of the Eastern roads to organize its force and to publish bulletins, reportedly reducing the number killed in 1912, as compared to 1911, by 35 percent and the number injured by 50 percent (Tarbell, 1916, pp. 69-70). Companies reported special areas assigned to accident prevention and safety including Ford Motor Company, a Safety Department as part of the Sociological Department, and the National Cash Register Company, a Health and Safety Bureau within the Welfare Department (Boettiger, 1923, pp. 129-130).

The American Museum of Safety in New York City was started in 1907 by the American Institute of Social Sciences. Patterned after European museums of safety which had existed for many years, it was this country's first adaptation of the exhibit method for safety education. In 1911 the museum was incorporated and began an aggressive educational campaign on accident prevention using exhibits, lectures and pamphlet material to arouse public interest and disseminate information (Lescohier, 1935, p. 369; Palmer, 1926, p. 13; Korman, 1967, pp. 179-180). One of their bulletins, "Safety" with rules, was used by companies to protect workers' health (Tarbell, 1916, pp. 77-109). In 1912 the Museum was given permission by the New York City Board of Education to carry its educational work into the public schools. Dr. William Tolman of the American Museum of Safety, with co-operation of the Brooklyn Rapid Transit Company and the Board of Education of New York City, trained thousands of school children (Lescohier, 1935, p. 369). Other organizations carried on successful educational work beneficial to industry. The First Aid Department of the American Red Cross under the direction of Major Robert Patterson, United States Army, provided classes on ‘First Aid to the Injured’ throughout the country; and, the YMCA started First Aid classes for many companies (Lescohier, 1935, p. 369; NACS, 1914, pp. 491, 647).

Education for the Foreign-Born

Educational programs for immigrants were generally interwoven with corporate welfare and safety programs because health and safety were special problems for immigrants (Brandes, 1970,

pp. 58-60, 116). At. U. S. Steel's South Works in Gary, Indiana, immigrants suffered twice the accident rate of English-speaking employees who could understand safety instruction and warnings (Green, 1980, p. 13). Prior to World War I business did not usually attempt to convert foreign-born workers into loyal, English-speaking Americans (Korman, 1967, p. 136). Rather, as described in Table 3, employers offered English lessons sufficient to familiarize workers with the language of their adopted land in order to avoid accidents and to instill respect for punctuality and obedience to rules (Dubovsky, 1985, p. 8; Kreuzpointer, 1918, p. 390).

Table 3. Programs for Foreign-Born Workers Prior to World War I

COMPANY	PARTICIPANTS	PROGRAM METHODOLOGY	STATED OBJECTIVES AND RESULTS
American Bridge Co. 1,500 - 2,000 employees classified as semi-skilled or unskilled Primarily male employees Educational work began fall of 1909	- Total enrollment of 125; average enrollment of 50 - Students from Austria, Russia, Italy, Greece, and Poland - Age range--18 to 30 years - Most have lower grade work as previous education - Students pay $1/month	- First-year subjects: English speaking, reading, writing, spelling, and civics - Advanced grades: Instruction in preparing papers & examination for citizenship - With sufficient enrollment, classes separated by nationality - Instructors--mostly company employees, both American and foreign born	- Objective: To speak, read, write English with degree of accuracy needed for work, play, social life. - About 25% achieve planned results - When students are able to use English sufficiently, may enroll in regular high school for arithmetic, drawing, etc.
Newport News Shipbuilding and Dry Dock Newport News, Virginia 2,800 black men and a few native whites and foreign born classified as unskilled Program began 1912	- Program began with 25 students--expanded to 130 in 1917 - Daily average attendance equals 80 - Age range--14 to 25 years - Additional classes being formed for older men - Few students have gone beyond 6th year in public schools	- Subjects: arithmetic, spelling, reading, writing, hygiene, first aid - Supplemental lectures in civics, thrift, health, sanitation, etc., illustrated by motion pictures - Instructors--black graduates	- Students reported as always attentive, willing, receptive with only rare instances of discipline - Students resulted as better in work, regular in attendance, more careful, neater appearance, thrifty - Proved that need existed to public schools who then took over classes
Westinghouse Electric and Manufacturing East Pittsburgh, Penn. Department started about 1905 as a branch of Casino Technical Night School Cost of school not covered by students paid by company and with some contributions from public school boards	- 80 men and 10 women enrolled - Age range of men--18 to 35 years, averaging 23 - Students from Austria, Greece, and Italy - About 10% have some education in high schools in this country; about 15% unable to read/write native language - Students pay $10 per term which is less than half of running expenses	- Subjects--alphabet, reading, spelling, composition, conversation, arithmetic, American history, citizenship - Departments divided into 4 classes: 1st class for for those who have no English understanding; 2nd, men able to read simple language; 3rd, further extension of 2nd class; 4th, men who speak language very well - Instructors are employees, not trained teachers, who devote evenings to work	- Students reported as very enthusiastic and appreciative, taking great interest and making every effort to learn English language and understand habits and ideals of country - Classes are reaching only most intelligent and ambitious of foreigners as public schools can reach lower classes better than company

NACS, 1916, pp. 742-750

In order to protect immigrants, groups such as the National Safety Council, the United States Department of Labor, the Bureau of Mines, and settlement workers groups such as Hull House also supported safety education for immigrants. Techniques for teaching immigrants included using interpreters, translating workplace signs into as many languages as possible, publishing multi-language editions of rules books, and safety movies. The commission of the Milwaukee Merchants and Manufacturers Association also sought the assistance of local churches to promote safety to immigrants (Korman, 1967, pp. 130-131).

JOB SKILLS TRAINING AND EDUCATION

Business experimented with providing job skills training and education to provide specific training for employees' jobs during the decades after the Civil War. Then, from the turn of the century until the War Years, employers developed and modified their earlier efforts and programs to meet the needs of their changing workplaces.(Dietz, 1916).

There were a number of employers which did include job skills training and education within the framework of their welfare programs, perhaps lending a more paternalistic air to the programs (Kett, 1994, p. 241). Contemporary Beatty, however, in his doctoral dissertation (1918), concluded that job skills training and education, as opposed to welfare education, was a unique form of education tied directly to the efficiency and productivity of the organization.

With job division and specialization, many of the new jobs for unskilled and semi-skilled jobs required minimal or no formal training. The employees who did these jobs were frequently immigrants who had either abandoned their Old World artisan skills or immigrants or migrants from the farm who had limited skills to bring with them. The skills and knowledge required were not embodied in their training but rather in the production process itself. Employers, not employees, controlled the mental component and the tools necessary to perform the job. These unskilled or semi-skilled workers could generally learn what they needed to know to get along on the job from their workmates (Brody, 1980).

The informal pick-up method of training, which had become practically nonexistent in the professional fields, continued to be used to train the majority of workers, especially those in semi-skilled jobs. Other more formal educational programs for semi-skilled and skilled employees included new apprenticeship arrangements and innovative corporation schools, and those programs which the employer contracted with outside agencies to perform.

On-the-Job Training

Workers in widely diverse fields continued to learn their jobs by pickup methods, in which observation, imitation, and individual initiative constituted the sole means of training (Hawkins,

Prosser and Wright, 1951, p. 4). This worker was the most economically vulnerable of all workers as new laborers could be trained in a relatively short time. Consequently these workers had little leverage for higher wages and better working conditions as they could easily be replaced with the ever-present supply of unskilled and transient workers (Ross, 1985, pp. 118-119).

Operators, such as the production workers employed by Warner Brothers, a manufacturer of corsets, learned job skills through on-the-job training. Warner Brothers reported that their regular job instruction was carried out by just keeping close supervision of new operatives when they began work. They were not in a separate school but were educated in each department in connection with each operation -- the Box Department, Accessories Department, Corset Department, or Metal Department (NACS, 1916, pp. 746-747).

Shoe factories, where operations were differentiated among workers, carried out much of their own training through on-the-job training. In 1909, a prominent shoe factory described shoe factories as "making their own help" and declared that, "each factory is a trade school". In these instances, the number of students were limited by supervisors who were capable and had an interest in training employees or giving employees an opportunity to learn. In the shoe business, "stealing a trade" was the term given to young men who learned the entire trade from one or more factories. The country factories were reported as being more susceptible because they were close to the raw materials and hired "cheap help". These were new workers lacking experience, who after about six months could learn some one part of the operation. This worker could then continue this process, leaving and migrating to another area with a factory where he learned another aspect of the operation, until he was knowledgeable. Thus, the trade was taught not through a school or formal instruction but rather picked up through keen observation and natural ability (Dean, 1909, pp. 157-158).

Job Instruction According to Scientific Management

The education of workers was an important part of the science Taylor's *Principles of Scientific Management*.. Under scientific management, education consisted of each employee receiving an instruction card which stated in minute detail the best method for doing his work. It was illustrated, wherever advisable, by drawings or photographs showing the proper methods to be used. The worker was expected to take part in his instruction by reporting back, whenever an instruction was not clear to him, so that the instruction cards could be revised and clarified. According to Taylor, it was very important that the worker understood that the instruction card for his job was based upon, "exact knowledge substituted for guesswork," or before an instruction card was prepared, the methods of doing the work were carefully studied by a technical expert (Godfrey, 1912, pp. 61-65).

Unlike the old foreman, who was a commander and a driver, Taylor's functional foreman was to be a to be a teacher and cooperator. His job was to show the worker how to follow the 'best way' (Godfrey, 1912, p. 67).

Changing Apprenticeship Arrangements

The 1860s found the American system of apprenticeship generally in disuse or seriously depreciated while the modern system had not yet evolved to train skilled workers (Jones, 1907, p. 15; Clark and Sloan, 1958, p. 4). Traditional apprenticeship, which had generally been the only means of entering many trades, not only restricted the number of apprentices but required long terms of apprenticeship. Consequently, it could not supply the growing need for workers knowledgeable only about a single process (Beatty, 1918, pp. 16, 19-20; NACS, 1914, p. 302; Lescohier, 1935, p. 271).

A regulated form of apprenticeship was continued by some organizations, especially the trades and smaller companies (NACS, 1914, p. 325; Bishop, 1868). The formal apprenticeship program of Disston Saw Works (Philadelphia), began by the father and continued by his sons, provided skills training for new workers, preference given to the sons of current workers, from the company's modest beginnings in 1840 until in the 1940s (Silcox, 1994). Another, the formal program of Baldwin Locomotive Works (Philadelphia), which was instituted in the 1830s soon after the founding of the company by founder Matthias Baldwin, endured through the 1860s. It was not to be revived in a new format until after the turn of the century (Scranton and Licht, 1986, p. 188).

Employers who disliked any control of apprenticeship by labor unions initially depended upon a continuous supply of labor from Europe and later searched for new methods to supply skilled native labor. Employers, especially in the manufacturing and transportation fields, were interested in the possible usefulness of trade schools as a substitute for traditional apprenticeship. They initially promoted both public and private trade schools, insisting that such schools not be pro-union, and, in the case of private schools, frequently causing them to be anti-union in their attitudes. Experience proved, however, trade schools were not generally able to produce skilled workers according to business expectations. Trade school training had to be followed by apprenticeship to turn out first-class workmen; and this type of training, a combination of trade schools and shop work, turned out to be more expensive (Lescohier, 1935, pp. 273-274).

The subdivision of trades into specialized tasks, dependence upon immigrants for skilled workers, and increasing worker mobility all contributed to many employers believing that traditional apprenticeship training did not pay (Lescohier, 1935, p. 271). Organizations, especially manufacturers and railroads, took it upon themselves to experiment with modifying apprenticeship in order to provide an adequate supply of appropriately trained employees (Bishop, 1868; Clark, 1949; Bureau of Apprenticeship and Training, 1991).

These changes created controversy between labor and employers. Unions, such as that of the carpenters, claimed that there was an insufficient demand for skilled laborers. Employers, from the

1880s onward, protested against unions for attempting to limit the supply of laborers claiming that there was an insufficient supply of skilled labor (Jackson, 1984, pp. 225-228).

Labor in an effort to protect their interests, almost unanimously agreed upon limiting the period of apprenticeship to not less than five years and restricting the number of apprentices. Labor also wanted to compel employers to teach the whole trade, to provide necessary schooling, and to be responsible for moral training. They subsequently supported petitions to legislators in Massachusetts, Pennsylvania, New York, Illinois, and Ohio. Laws did pass, as in Massachusetts, which protected to some extent the employment of apprentices. The laws in many cases were not enforced and had little, if any, impact (Jones, 1907, pp. 16-19).

Labor also experimented with establishing their own innovations of the traditional system. The mechanics of Cincinnati come up with what was known as the American system of apprenticeship. This was a loose system of combined trade school and shop courses, where the worker progressed at his own speed (Report of the Commissioner of Labor, 1889-1890, p. 110).

Modified Programs Provided by Manufacturers

As illustrated in Table 4, manufacturing employers modified the traditional system to train employees to meet their specific job requirements.

Table 4. Apprenticeship Training of Manufacturers

Manufacturer	Motive/Rationale	Program	Methodology	Reported Results
Curtis Publishing Philadelphia Program began 1912 (1)	- Because of scarcity of good compositors and proofreaders and men qualified to fill higher positions, company decided to assume share of training	- Applicants are about 15 years old and are graduates of grammar school - Must pass written exam and interview	- Continuation school program used in combination with public schools and other printers in city - Character molding started in first year	- School has only been in progress for two years
General Electric Lynn, Massachusetts System founded 1899 Program in operation for ten years (2)	- To develop skilled employees in various trades - To create body of journeymen for possible promotion to foremen	- Applicants from 15-18 years old who have at least grammar school education - Applicants with advanced education given allowance of time	- Special training department devoted to preliminary teaching - Tool equipment is included in training rooms - Superintendent of Apprentices in charge	- Of 76 graduates, over 50 still in employee of company - Some graduates filling positions of assistant foremen and inspectors
Ludlow Manufacturing Company Ludlow Massachusetts School started after discovering all hands trained in Scotch mills (3)	- To train apprentices in special branch of textile trade concerned with manufacture of jute goods - To develop desirable, law abiding citizens	- Applicants from 14-16 years old in good physical condition and of good moral character	- School consists of two parts -- practical in mill (5 hrs/day) and theoretical in school (3 hrs/day)	- School only in operation a short time, but moral influence on boys apparent - Personal appearance has improved
Packard Motor Company Established about 1914 (3)	- To train students to be foremen and, later, executives	- Applicants at least 16 years old with eighth grade education in good physical condition - Students in many cases are graduates of technical schools	- School classes held 5 hrs/week - Do productive work; go to different department every 6 months - Library available	- Results not available

(1) Ashe, 1914, pp. 368-369; Isfort, 1914, pp. 362-367
(2) Alexander, 1909, pp. 141-150
(3) Jones, 1908

Combining in their educational programs what could be gained both from apprenticeship and from schools for trade and technical instruction, manufacturers established their own apprenticeship schools. The youth would be taught all that he would be learn in an independent industrial institution, and he would be given skill to operate equipment which he would have acquired under the old apprenticeship system. The intention was to have the apprentices complete the program understanding

not only the science and mathematics of his work but also knowledge of the practical art he would have gained as an apprentice (Jones, 1907, pp. 10-11).

Railroad Apprenticeship Programs

Railroad operations, a systemic and technologically complex process, lent themselves to apprentice (craft) training systems. See Table 5. The shops of railroads were generally widely scattered creating different training problems from those of the manufacturing and industrial concerns, but they were able to adapt various apprenticeship methods as needed (NACS, 1918, pp. 351-52; Wyckoff, 1976, p. 89).

Table 5. Railroad Apprenticeship Programs

Railroad	Motive/Rationale	Program	Methodology	Reported Results
Atchison, Topeka & Santa Fe Railway Topeka, Kansas Began 1907	- Economic justification - Had difficulty finding trained mechanics - Management said, "We must make our own men."	- Entrance requirement ment -- physical requirement	- Individual instruction--working along side journeymen - Do productive or practical shop work - Shop instructor for every 10-12 boys	- Program reported as successful due to shop instructors (earlier program failed as crowded shops with 'green 'boys' made too many demands on master mechanics & foremen
Grand Trunk Railway As of 1908, had operated program for several years	No information available	- Applicants from 15-18 years old - Entrance exams and physical - Term from 4-5 years - Not paid for classroom time - Apprentice provides own drawing tools	- First 6 mos. in blacksmith or boiler shop - Given text book covering entire apprenticeship - Evening classes in mechanical drawing, arithmetic, & applied mechanics	- Results reported in 1908 as being "very successful"
Louisiana and Texas Railroad Company In operation for many years	- To provide skilled labor - To assist in practical education of sons of workers - Provides 'best men' in company	- Workers' sons given preference	- Classroom work established to teach drafting - Apprentices encouraged to take external mechanics courses in correspondence schools of good standing	- Turns out first-class mechanics far above average of those who seek same class of employment - Those who leave occupy successful positions with other lines
New York Central Lines New York City Began March 1906	- Lack of skilled mechanics & difficulty in securing foremen - Lack of suitable means for recruiting skilled labor - Old educational methods--learning from foremen--not suitable for new conditions	- In beginning there were 20 shops, each with 20-74 apprentices and 4 apprentice schools; system being extended throughout line (1909)	- Apprentice instructor closely supervises shop work - School conducted during work hours for mechanical drawing--students paid for attendance - Course and problems arranged to suit need of each apprentice	- Interest has grown - Apprentices advance more rapidly with - Railroad has less spoiled work and greater surety of obtaining steady and skilled labor supply

Thomas, 1914, pp. 304-313; Wright, 1908, pp. 42-43; Cross, 1909, pp. 163-174

The Supervisor of Apprentices of Atchison, Topeka & Santa Fe Railway explained why he regretted the railroad using the term 'school' when the company named their training program the Santa Fe Apprentice School. While it was a school in both a practical and theoretical sense, he contended that it differed from public or private educational schools in that it trained the boy for a life's work under conditions and circumstances not available or enjoyed by the so-called trade schools. The Atchison, Topeka & Santa Fe Railway had begun their school in 1907 when they were having difficulty attracting either trained or untrained employees and determined that they must “make

their own men." They consequently reported that they had been able to train skilled mechanics who could do their work and do it quickly, cheaply, and well. They reported that they had produced, "Santa Fe men, trained by Santa Fe men, in Santa Fe ways, methods, and possessed with a spirit of loyalty and affection" (Thomas, 1914, pp. 304-306).

Business Evaluation and Consideration of External Education

Education for work had also taken on new importance and forms outside of the workplace (Beatty, 1918, p. 8; Fisher, 1967, p. 5; Nadler, 1989, p. 20). Various types of schools existed for industrial education, some supported and supervised by governments, some by labor unions, some by industry, and others by a combination of the above (Lescohier, 1935, pp. 272-292). Seven states appointed commissions to study plans for industrial education between 1902 and 1911 and the American Federation of Labor appointed committees to study the problem (1903). Continuation schools began with laws in Ohio in 1910 and Wisconsin in 1911, and other states followed (Faulkner, 1951, pp. 263-264). Although business contended that these external forms of education did not produce a well-trained employee, at times they integrated external programs with their own educational activities.

Continuation Schools

Employers reported trying out continuation and part-time school arrangements in conjunction with their apprenticeship programs. One maufacturer, Fore River, cooperated with a part-time school, sending some of their apprentices in pairs, which alternated weekly between actual trade work in the company shop and technical instruction required by the trade in the school. Another employer, Newport News Shipbuilding and Dry Dock Company, made it compulsory for apprentices studying drafting to pursue some kind of external study. The majority of apprentice students attended public night school or YMCA classes. The shipbuilding company cooperated with the public night school and the YMCA in directing the courses of study and in the selection of teachers. They reported having good results working with the night school because, unlike the ordinary system of public education which they felt put too much emphasis upon unrelated subjects, it was under the direction of practical men who understood the needs of the boys being trained (NACS, 1914, p. 354).

Correspondence Study

In the latter part of the 1880s, Thomas J. Foster, the publisher of the Mining Herald at Shenandoah, Pennsylvania, instituted a question and answer column on mining problems related to accidents. When state legislation required mine foremen to pass an exam related to mine safety, Foster published a course covering various mining subjects. The success of this course led to the establishment of the International Correspondence Schools (ICS) in 1891 with 115 students. The program expanded to 10,105 enrollments in 1895, 251,310 in 1900, 1,363,700 in 1910, and 2,271,193 in 1920 (Haynes and Jackson, 1935, p. 98; Noffsinger, 1926, pp. 11-13). Other smaller

schools joined this fast-growing industry offering courses in practically every imaginable subject, but ICS remained the leader.

Correspondence instruction, which experienced phenomenal growth by offering an optional means of vocational training for employees, was not without problems. Arthur Jones reported in a Bureau of Education publication (1907), *The Continuation School in the United States*, that the authorities of correspondence schools (including ISC) were unable to provide him with definitive data regarding their students – ages, number enrolled, or what proportion of enrolled students were engaged or actually students. Jones consequently decided to disregard the pupils in schools of correspondence in his report because the number which were actually students was not significant (1907, pp. 27-28). Only a small proportion of students reportedly completed the courses, which usually took from five to six years. Another contemporary reported correspondence schools could be mere money making schemes and their instruction practically worthless (Adams and Sumner, 1915, p. 454). And, another criticism applied to correspondence for teaching a trade was that students were not supplied with the necessary tools and equipment (Noffsinger, pp. 64-66). The lack of appropriate tools had also been attributed to public high schools' inability to teach technical subjects (Kett, 1994, p. 251).

There is little evidence of business support for employees' efforts to learn through correspondence study. The NACS discussed the pros and cons of the correspondence method of instruction. Delegates to the 1919 convention reported that although there was none of the stimulation of personal contact or discussions, correspondence study could suffice, in some instances, for general subjects such as advertising, office methods, and safety. They suggested that where student employees were scattered over a wide territory -- railroad employees or traveling salesman -- that correspondence instruction, either by an independent school or through company developed lessons, might be the only means to effectively and economically teach students. At the same time they said that the instruction offered by correspondence schools could be "pure fake" (pp. 631-637, 676-677).

Trade Schools

Although both management and labor agreed that trades schools, which offered both a general education and specialized shop training, should be provided at public expense, such schools encountered great difficulty in providing adequate training for industry. Professor Herman Schneider, Dean of the College of Engineering of the University of Cincinnati, expressed how it had become evident at that time (1909), that trade schools were out of the question for industrial education. First, nearly all trade schools planned for a limited number of trades -- machinists, wood workers, molders, bricklayers and carpenters. Secondly, it would be impossible to organize a system of trade schools to train even a small number of the children for manufacturing and business trades. Also, since the trade school was nonproductive, it would have to be supported by private endowments or tuition. Since the students who would attend trade schools would be leaving public schools because of

financial necessity, only a very small portion would be able to pay to attend (Schneider, 1909, pp. pp. 50-55).

Public Schools

Employers complained about public school education. They objected to having to teach apprentices spelling, writing, and mathematics and at the same time having to pay taxes to support public schools. Businessmen expressed their belief that the public schools should give a student a base to build upon and the companies should add what was needed for an apprentice to become thoroughly competent in his special line such as mathematics, mechanical drawing, etc. (NACS, 1916, pp. 306-307).

Business continually attempted to influence public education. At the 1916 Annual Conference of the National Association of Corporation Schools, delegates discussed their positive influence upon the formal educational programs of public schools and colleges. They indicated that they had been able to favorably influence these schools' methods and the content of their courses to reflect business values (p. 325).

Business Preference for Providing Employee Education

The Superintendent of Apprentices of the American Locomotive Company, Schenectady, New York, described that, prior to establishing an apprenticeship course for draftsmen in 1907, that they had drawn draftsmen from four principal sources -- trade and technical school graduates seeking experience in machine design; practical machinists who had worked in the shop; ready-made draftsmen who had experience elsewhere but were seeking new positions; and, from young men who began working in their office and gradually learned drafting. None of these sources, however, provided a strong and usable corps of draftsmen. The college man had technical training but little practical knowledge; the shop man lacked technical training beyond 'rules of thumb'; the journeyman draftsman was of unknown caliber and had to be retaught the company's ways; and, the office boys were of limited schooling and, had little disposition to study the theory of locomotive designing. Consequently, business turned to their own training programs (NACS, 1914, p. 284).

The Atchison Topeka and Santa Fe Railway System expressed their problem with trade schools. Their experience was that the scheduled time in their shops for making foot steps to be used on railroads for assisting passengers from the platform to the car steps was twenty-two minutes. And, while their first- and second-year apprentices could make them in less time than that, students in the trade schools used nine hours to make one foot stool. Employers contended that trade schools did not teach the value of time (Thomas, 1914, pp. 310-311).

General Electric Company, New York Edison Company, American Locomotive Company, and dozens of other employers reported that they had found by experience, if they wanted shop employees correctly trained, they needed to do the training themselves (1914). Businesses reported

finding this necessary because of the failure of externally provided education -- either trade or technical schools or traditional apprenticeship. R. J. Watson, Instructor-in-Charge of Trade Apprentices for Westinghouse Electric & Manufacturing Company described their trade apprentice program as an economic necessity, " . . . . with the advent of high-power machinery there has come a demand for working skill that has been only half supplied and which is rapidly growing less" (NACS, 1914, pp. 284, 326, 499).

Although not all employees reported successes , a growing number of businesses who considered well-trained employees as valuable assets were willing to pay the cost for educational programs which included costly equipment, designated space and shops, non-productive employee time, and salaries for educational directors and teachers. One employer contended money spent for training employees was an investment, not an expense, and that a manufacturer could reap 150 per cent in benefits by taking into its employ boys and providing apprenticeship schools. Another, the Fore River Shipbuilding Company, reported a return of investment from their apprenticeship system of 152 per cent (NACS, 1914, p. 340).

Corporation Schools -- A New Development

Probably all education within industry began with the institutional form of apprenticeship; and, corporation schools, sometimes referred to as apprenticeship schools if the education was intended solely for apprentices, were exemplary of such an effort to change and improve this institution (Lescohier, 1935, pp. 277-278; Bureau of Apprenticeship and Training, 1991). They were developed by employers in response to their perspective of a need that was not being met by existing educational institutions -- the need to provide an adequate supply of employees with the necessary technical and social skills to adapt to the new types of jobs with defined time and production requirements in the increasingly disciplined factory system. Although there was an insistent demand for skilled labor in the United States, even by 1870, no public or private educational institution on a secondary level offered industrial training. Corporation schools came into existence to fill this void when business succumbed to the pressure of necessity and undertook the task of training their workers for various positions (Beatty, 1918, p. 6; Clark and Sloan, 1958, p. 6; Haynes and Jackson, 1935, p. 105).

Corporation schools were defined by Haynes and Jackson as, "a systematic course of training in a regularly organized school maintained by the employing institution," for training their own employees (1935, p. 105). Beatty, who researched corporate schools in the early 1900s for a doctoral thesis, further defined a corporation school as, " . . . a school maintained by a business concern, quite independently of outside control for the purpose of fitting its new employees for efficient service, or for the further training of its older employees to fit them for positions of greater responsibility, as foremen, executives, or technical experts" (1918, p. 24).

The development and growth of corporate schools were almost entirely independent of the development of public education, making it a unique form of education experimenting with the relationship between economic motives and efficient learning (Beatty, 1918, p. 6). They were under the direct control of the corporation; they neither evolved nor operated in any set pattern; and, their training consisted of strictly work-related technical aspects of production. Training was offered as full-time classwork or a combination of factory and class work. Some employers permitted the learning laborer to attend classes outside the workplace; some paid for class-room time and some did not. Companies reported that they implemented the schools to recruit skilled employees, to increase industrial efficiency, and to promote individual development. They further defined efficiency as increases in the supply of trained employees, increases in the number of men qualified for promotion, improvement in the quality of the product, decreased labor turnover, and reduced waste of materials and industrial accidents (Clark and Sloan, 1958, p. 6; Jones, 1907, pp. 174-175).

Manufacturing and Railroad Corporation Schools

Beatty, who found only limited literature describing such schools, reported a total of four corporate schools, those of manufacturers, as in existence by the turn of the century (1918, p. 24). Other sources reported from two to five (Clark and Sloan, 1958, p. 4; NACS, 1914, pp. 403-405). Documented corporate schools include the Westinghouse Machine Company which began its corporate school in 1888 (Lescohier, 1935, p. 278) and Felt and Tarrant Manufacturing Company, manufacturer of the comptometer, which began their system of schools prior to the close of the century (Haynes and Jackson, 1935, pp. 105-106). The Cambria Steel Company employed teachers who taught classes in industrial arts, mathematics, chemistry, geology, and political economy as early as 1881; and, P. Lorillard and Company, New Jersey, operated a school for employees by 1886 (Brandes, 1970, p. 5).

R. Hoe Company, New York printing press manufacturer, has the claim as having begun the first formal corporate school (Beatty, 1918, p. 24; Lescohier, 1935, p. 278; Haynes and Jackson, 1935, p. 105), largely as a result of being unable to obtain workers able to do the job. Although the founding date is reported as both 1872 (NACS, 1914, p. 404; Cremin, 1988, p. 484) and 1875 (Beatty, 1918, p. 24; Fisher, p. 110), the 1892 Report of the Commissioner of Education reported that Messrs. R. Hoe & Co had conducted a school for thirty years for the benefit of the sons of their workmen (pp. 102-103). The company reported in the fourth annual report of the New York Bureau of labor statistics that 250 boys who were employed in the factory of Messrs. Hoe were divided into classes receiving instruction in mechanical drawing by rule and compass, arithmetic, algebra, and geometry two evenings a week, the school room and teachers provided by Hoe. Work ended for these boys at 5:30 p.m., and Messrs. Hoe gave them their supper so that they did not have to travel

home and back to attend the classes which began at 6:30 p.m. The school session lasted a better part of the year with intermission in the summer evenings, with the boys further instructed and entertained by lectures and other means to relieve the monotony of the school routine (Report of the Commissioner of Labor, 1892, pp. 101-102). Hoe felt that the school provided satisfactory results, developing boys into workmen who understood their duty and how to do it intelligently. Hoe & Co. described the course of study as, "thoroughly practical, with a direct bearing on their advancement in the calling to which they have given themselves" (Jones, 1907, pp. 128-30).

Although apprenticeship had been used for many years in railroads, the nation's first modern business enterprise (Chandler, 1977, pp. 81-208), toward the end of the century railroads were finding that this training arrangement was not always effective (Eaton, 1899, p. 907). By the turn of the century, the railroads had developed limited corporate schools in order to improve training and performance of railroad employees (Eaton, 1899, p. 873). The Grand Trunk Railroad, in response to a survey conducted in 1914 by the National Association of Corporation Schools, reported that they had organized a school in 1899 to train machinists, molders and pattern makers. The courses which were conducted by Grand Trunk ranged from four to five years (NACS, 1914, p. 404).

One unique method, which might be described as a traveling classroom, used by the railroads was known as the instruction car. While the 1898-1899 Report of the Commissioner of Education indicated that many railroads had air-brake instruction cars, they described an exemplary one as being owned by the Westinghouse Company. At that time the Westinghouse air-brake instruction car had been in service for about ten years with 126,850 students reportedly passing through it. The car was moved from one road to another providing on-the-spot training to engine drivers, firemen, conductors, and trainmen (Eaton, 1899, pp. 900-902).

Although the corporate school movement was not to really gain impetus until after the turn of the century, these early pioneers not only invoked interest but also provided early models. As corporation schools developed following the turn of the century they varied according to the needs of the individual business -- not only in manufacturing and transportation, but for clerical forces, selling and advertising staff, correspondents, mechanics, and executives (Haynes and Jackson, 1935, p. 108).

Office Work Schools

The typical office clerk in the early nineteenth century office was an apprenticed, aspiring businessman working in a small office staffed by men. An employer who took on an apprentice assumed the responsibility of giving a young boy good training in a trade and providing paternal guidance, including attitudes and standards of behavior, which had clear implications for upward mobility (Davies, 1982, pp. 5, 9, 22-26).

The first private commercial and business schools were proprietary business ventures charging private students, mainly young men from the business houses, tuition for their offerings. When the young business schools opened in the early 1800s, they encountered resistance because apprenticeship had long been accepted as the only practical method for business training (Moreland, 1977, p. 44). Employers at first were less than enthusiastic, not being able to conceive that business routine could be taught off the job. But, by the end of this century this misapprehension had disappeared, and graduates of the 'clerk factories' found a ready market for their skills. This form of education not only presented an option to apprenticeship but also encouraged the development of new methods of education by exhibiting that business transactions could be reduced to a systematized statement which could be taught in a schoolroom (Haynes and Jackson, 1935, pp. 15-25; Wyllie, 1954, p. 111). Business schools and colleges, which had experienced growth from a few students in 1840 to more than 100,000 in 1890, came to dominate the field of business education from 1850 to around 1890 (Haynes and Jackson, 1935, pp. 14, 25-40; Carlton, 1913, p. 222).

The composition of the office force changed as more women entered the workforce in the closing decades of the nineteenth century. They had established a precedent for their presence when the United States Government had employed women during the Civil War, paying them one-half to two-thirds less than they paid men. Women quickly became the majority of typists in the clerical office forces. Office work was considered to be clean, safe, and respectable for a woman. Assumptions were also made that women were naturally fitted for the typewriter. Not only could they supposedly sit for a longer period of time, but they had manual dexterity as evidenced by their operating sewing machines and playing the piano. It became cheaper to hire women, who were entering the labor force in increasing numbers. Since 1890, the great majority of female office workers have been native-born women. Public high schools and commercial schools offered training to both men and women; but men, finding clerical jobs not as lucrative as other opportunities, took courses leading them to management (Quinney, 1986, pp. 260-264; Stephenson and Asher, 1986, pp. 19-20).

After 1890, typewriting instruction gained increasing prominence which in turn gave emphasis to shorthand. These two subjects formed what was called 'the backbone of the business curriculum'. Business schools were quick to respond to this opportunity by introducing instruction in stenography (1872) and typewriting (1873). The New York YMCA began to offer training for young women typists in 1881 and was soon receiving more requests for typists than it could fill.

Training for office work, which had begun with a very narrow practical curriculum, began to change as a result of the changing workplace. Typing and shorthand demanded use of proper English and correct spelling. Consequently business correspondence and filing became essential courses of study (Moreland, 1977, p. 62). State and federal laws also gave impetus to accounting training for

office work. Rules and regulations requiring the classification of accounts, the preparation of reports to commissions, and conformance with tax laws, created the need for additional accounting training for office workers (Davies, 1982, pp. 54-55). With the increasing presence of women, schools also attempted to take on the role of teaching what they deemed were desirable personal characteristics for female employees -- respect for authority, promptness, dependability, and loyalty. Secretarial programs also featured personal improvement courses such as lectures on the right way to walk, speak, dress, and how to adjust to the office environment (Quinney, 1986, pp. 266-267; Stephenson and Asher, 1986, pp. 19-20).

Training for office work did not generally give an understanding of business as a whole. Business school students learned to operate office machines, but they were not encouraged to question the way that new machines were used or to think of their effect on the quality of the work experience (Carlton, 1913, pp. 222-223; Quinney, 1986, p. 266). The reorganization of office work -- the increasing division and redivision of clerical work into specialized tasks, and the partitioning of firms into departments -- meant that an officer worker increasingly needed to learn only a small number of tasks (Davies, 1982, p. 31).

As more people found employment in business, the percentage rising to 8 per cent in 1900 from 5.7 in 1870 and only 2.5 in 1820, public support of and pressure for business education grew. States slowly began to initiate business courses in their tax-supported schools (Moreland, 1977, p. 60). The Boston English High School was the first public high school to include business training -- bookkeeping, penmanship, and arithmetic, as a result of Massachusetts 1837 law requiring every community having 500 or more families to offer bookkeeping; Saint Louis schools added phonography to their regular course of study (1854); especially notable was the Commercial High School opened in Pittsburgh which offered the most comprehensive commercial curricula up to this time (1868); and, the Washington, D.C., high school (1889) which was opened by the board of education to train civil service office employees for government offices. Public schools did not generally make inroads into business education until after 1890 when typewriting instruction and shorthand instruction gained momentum, followed by business correspondence and filing (Carlton, 1913, pp. 222; Haynes and Jackson, 1935, pp. 25, 35-36; Moreland, 1977, pp. 61-62).

In spite of the external options, some businesses preferred to provide their own office work schools, promoting them as straight business propositions to be regarded from a dollars and cents point of view. They were defined by the National Association of Corporation Schools as, "Any definite systematic method of training employees so that they will perform their assigned office duties correctly and intelligently" (1914, p. 500). This could mean an internal program with classes and instructors or smaller, less formal office programs (NACS, 1914, pp. 498-500).

The NACS reported (1914), that in addition to four large schools conducted by National Cloak and Suit Company, Burroughs Adding Machine Company, Larkin Company, and Curtis Publishing

Company fourteen other concerns had adopted office work schools. National Cloak and Suit Company, with an office staff of over 800, provided education for students in three set-aside classrooms under the supervision of the office manager and ten instructors. Classes, which were in session from three to four weeks each, were periodically held in 21 subjects including order writing, correspondence, mail examining, filing, use of the phonograph and typewriter, and penmanship. Students spent approximately half of their time working in departments and the other half in classrooms. Smaller offices also presented systematic programs to educate office workers including those of the Sherman Williams Company and Alexander Hamilton of New York (NACS, 1914, pp.).

Employers touted the results of their programs. Mr. Wolf, responsible for the Employment and Instruction Department of the Curtis Publishing Company reported that, through the efforts of the school, the bonus system, and other modern methods, one division of eighteen clerks increased efficiency 80 percent or from 42 to 74 percent in five months, resulting in a saving of $4,000 a year. Another group of 33 clerks increased their efficiency 100 percent, from 49 to 98 percent, saving approximately $20,000 a year. Total reported savings for the company were $46,500 at a cost of $1,000. The National Cloak and Suit Company estimated that it cost between $50 and $100 to break in a new employee under the old individual tutoring system, while the new method cost from $20 to $25 (NACS, 1914, p. 516).

Businessmen offered another reason to establish their own schools. They contended that antiquated office methods and processes would benefit from office work schools because to teach methods and operations it would be necessary to study and to standardize operations. Employers indicated that they had not been as alert to adopt improvements in the office as they have been to install modern factory methods and that they should analyze office procedures as Taylor analyzed shop methods (NACS, 1914, pp. 504-505).

Business promoted the idea that a closer cooperation between industry and the public school system would result in increased efficiency in the school system. This would assist business, which was carrying out educational work in corporation schools which they contended should take place in regular public schools. Businesses reported taking proactive measures to ensure that commercial work in high schools met business requirements. They attempted to modify high school commercial curricula to meet the demands of main businesses, to start summer schools for commercial teachers to indoctrinate them in the work of business houses, and to promote surveys to shape high school courses to meet industrial demands (NACS, 1914, pp. 534-535, 564-566).

Department Store Schools

Herbert Tily, General Manager, Strawbridge & Clothier, Philadelphia, described schools for the training of a retail selling force maintained by department stores as existing out of a recognition of

the need for properly educated help and, on the other hand, the inefficiency of both public and private schools. Tily contended that business institutions, being organized for profit, could not undertake any work which did not promise a net return in dollars and cents. He suggested that, if the product of public and private schools were properly equipped to handle office work satisfactorily, department store training schools would not need to exist (NACS, 1914, p. 84).

Clerks and other employees in mercantile establishments could not be trained as employees in manufacturing and other establishments (Jones, 1908, p. 130). Retail selling in department stores by primarily women presented managers with a different situation because they wanted to foster rather than dismantle skill as in the new factories. In the 1890s and more intensely during subsequent decades, managers began to realize that their irresistible ads, dazzling merchandise, and sumptuous stores, while attracting crowds, created high overhead but did not necessarily sell (Benson, 1986, p. 132). At the same time, because of the public nature of the store, socially concerned journalists and investigators, who had begun looking closely at the American world of work in the 1880s, began to pay attention to department stores as places of employment. These groups cooperated with women's reform organizations -- the National Consumers' League, Women's Trade Union League, and the Young Women's' Christian Association -- to reach conclusions frequently damaging to department stores as places of employment. This combination of internal financial pressures and external pressures from customers and social reformers pushed department stores to frame new roles for employees and new policies to deal with them. One such policy was that skilled selling would hopefully result from training and education (Benson, 1986, pp. 126-128, 132-135).

Training consisted of merchandise and salesmanship training. Merchandise training surveyed the historical development of a product, its manufacturing process, its properties, and its uses. By contrast, salesmanship training built upon saleswomen's gender identity, training women to be consumers even before they were trained to be saleswomen. Once behind the counter, they had only to apply their interpersonal talents. Training programs also encouraged saleswomen to develop social skills so that they could create sales where there would have been none and taught them to expand individual sales transactions through suggestion selling (Benson, 1986, pp. 147-149).

Department store managers, who blamed both the home and school for the clerks' lack of skills, began to transform department stores into educational institutions. They described public schools as falling short in the methods as well as in the ideology they taught -- not encouraging thinking, providing only admonition and explanation, and failing to teach students to analyze rather than memorize. Department stores undertook to furnish the formative influences that the home and educational facilities lacked. The school and family imagery pervaded the retail literature -- a 1916 discussion of Marshall Field's personnel department described it both as "Dean of Women" and as a "conscientious mother." At Filene's, the store manager and a counselor were known to the female employees as "Dad" and "Mother" throughout the 1910s and 1920s (Benson, 1986, pp. 141-142).

John Wanamaker, founder of the Philadelphia Wanamaker Department Store, was a pioneer in many approaches to managing his labor force, including training (Licht, 1991, p. 67; Adams and Sumner, 1915, p. 441; Jones, 1908, pp. 130-131). The Wanamaker store school, called "The John Wanamaker Commercial Institute," an organization inside the Wanamaker store reported as being in operation by 1897, was described by John Wanamaker as, "the first actual 'school of practice' of business methods, giving daily opportunities to obtain a working education in the arts and sciences of commerce and trade." Wanamaker publicized a degree from his school as being comparable to a combination of Harvard College's Master of Business Administration and years of actual experience in the business world. He dubbed his school the American University of Trade and Applied Commerce (Jones, 1908, p. 175).

Separate school sessions were held mornings for boys and girls under 16 years of age, while boys from 16 to 18 years, after a hot supper in the dining room, had evening sessions. The curriculum, instructed by instructors who taught in the day schools of Philadelphia, included reading, writing, arithmetic, English, spelling, stenography, correspondence, bookkeeping, commercial geography, commercial law and business methods. Foreign languages, French and German, were required for those who would go abroad in their business dealings, but were elective for others (Otey, 1913, pp. 52-53; Wanamaker, 1909, pp. 151-154; Spring, 1972, pp. 38-39).

Wanamaker attributed his idea for the store to both business need and moral obligations of an employer. He said that, "Every man . . . to-day must recognize the fact that a business career is a profession . . . . Men and women must be trained for it." Wanamaker also contended that, as an employer who controls the output of workers' energy and brains, he must not permit workers, "to drift along undisciplined and unlessoned in the science of his work" (Wanamaker, 1909, p. 152).

An employee's performance in the store school determined wages, advancement opportunities, and even whether employment continued. After twelve years of operation and 7,500 graduates, Wanamaker suggested that the store had not only improved methods of work and the character of personnel, but had also developed principles of control and government and organization (Wanamaker, 1909, pp. 151-154).

Other later accounts included a sales-training program began shortly after the turn of the century by the Boston Filene store. Included in the course were the knowledge of merchandise, sales techniques, and store systems and the inculcation of a sense of personal interest in the welfare of the store (Mahoney, 1955, pp. 79-84). Strawbridge and Clothier's Commercial Efficiency course, covering a period of two years, trained their retail sales force in writing, speaking, knowing the commodities for sale, and character-building (NACS, 1914, pp. 90-93). Sears Roebuck and Co. established a school of a similar kind as a result of employee requests. Three evenings a week, teachers who were mostly day-school teachers and YMCA workers, gave instruction in penmanship,

stenography, spelling, and business arithmetic. A small tuition fee was charged to students to cover the salaries of the teachers (Jones, 1907, p. 131).

By the early 1900s the majority of large mercantile establishments had welfare programs, but not all were successful in maintaining educational classes. Some employers after years of experimentation abandoned educational work, among them John Wanamaker's firm. Reasons given for discontinuing educational programs were that public evening schools could do the same work to better advantage and that clerks' time could be used more profitably in other ways (Jones, 1907, p. 130). Department stores also turned to cooperative arrangements with public schools. Boston department stores reported getting the public schools of Boston to establish a continuation school in the stores where a group of retail employees could be trained under public school instruction. Training courses included good salesmanship, business arithmetic and English (NACS, 1914, pp. 462-463, 474-475).

Other organizations trained both saleswomen and teachers of saleswomen. The prototype of modern store training was a school founded by Lucinda Wyman Prince, a veteran of the college settlement movement at the Women's Educational and Industrial Union, an institution founded in Boston in 1880 for the primary purpose of discovering and expanding new opportunities for women. Sharing other women's convictions that women workers had to be more efficient if they were to be better paid, she put her theories into practice in training saleswomen. She conducted her first class in 1905, and her graduates performed so well that, within two years, sixteen Boston Stores had agreed to accept students for part-time work and graduates for full-time work. The school eventually shifted its emphasis to training teachers of saleswomen (1912), and it became affiliated with Simians College the next year. A similar effort began in New York (1908) as a night school with the sponsorship of Anna Spencer and teaching by Diana Hirschler, former welfare work supervisor at Filene's. The school was affiliated with New York public schools, which gave it a certain permanency as well as the luxury of not charging tuition (Benson, 1986, pp. 151-152; Gilson, 1940, pp. 33-37).

Participants in the movement for retail education had different motives. While the stores wanted to improve worker performance, others wanted to improve the lot of the retail store worker. Ms. Prince saw education as an approach to improve the lot of women in department stores who received low wages and had no prospect for advancement. Ms. Prince's cohort, Mary Barnett Gilson, who worked closely with the sales girls, wrote in her bibliography that she never heard any of the parties involved discussing the possibility of forming a union. While she surmised that it never entered the salesgirls' heads, she concluded that others involved with the organization of the school, even it they were closely associated with labor organizers, did not broach the subject because it would destroy any chance of winning the cooperation of the department stores for their pet project. The store school would cease to exist if employers feared any union agitation (Gilson, 1940, pp. 39-40).

Marketing and Selling Schools

Concerns such as National Cash Register (NCR) and the Burroughs Adding Machine Company reported that the cost of training their own salesmen was offset a hundred times or more by the additional amount of increased business (1914, NACS, p. 409). John Patterson, National Cash Register Company, actively believed in educating salesman -- that salesman were not born, as was the commonly accepted concept, but rather could be educated and trained to sell (Marcosson, 1945, pp. 109-155). Patterson's innovative educational efforts have been attributed by NCR historian Crowther to humanitarianism (1923). However, other historians have suggested that Patterson, a shrewd businessmen, was a humanitarian when it made good business sense (Crandall and Robins, 1988; Marcossen, 1945, p. 223).

Patterson's initial methods are purported to represent, " . . . the first attempt anywhere in the world to make selling other than a purely individual effort" (Crandall and Robins, 1988, p. 52). Probably the real beginning of the NCR method of training salesmen occurred when Patterson called his five full-time agents from across the country to Dayton for a meeting at the old Phillips Hotel (1886). When Agent Blood, who had an excellent selling record, fell ill and John Patterson was visiting him in his sick bed, Patterson asked a question he was to ask many times in the future, "How do you sell?" Blood replied that, although he had no real method, he never brought up the matter of a cash register until he had made friends with the prospect and his employees who would use the register. Patterson immediately decided that the other salesmen needed to be aware of Blood's successful techniques. This method of learning from successful salesmen was to develop into the NCR method of training. This was also the beginning of the convention idea of bringing the sales agents together where they could all learn from each other. As a result, NCR reportedly doubled the number of registers they sold in 1886 (Crowther, 1923, p. 217). The National Cash Register Company consequently worked out a selling talk for their salesmen in 1887; and, on April 4, 1894, they established the first sales agents training school in the United States, the National Cash Register School of Salesmanship (Haynes and Jackson, 1935, p. 105; Marcosson, 1945, pp. 114-115).

GENERAL EDUCATION FOR CULTURAL AND PERSONAL DEVELOPMENT

General education encompassed education which employers viewed as positively influencing and enhancing employees' behavior and general character and consequently their ability to perform their jobs. A contemporary at the turn of the century contended that an employers' civic responsibility included cultivating employers by increasing their intellectual power, which would extend into the workplace with employees producing better ideas and results (Shuey, 1900, p. 25).

Building and Uplifting Employees

Business on the most fundamental level believed that education could uplift employees and that it could improve their mental abilities and help them acquire habits of industry. Business had a basic philosophy -- that of producing an improved workman -- which could be achieved through education. Employers regarded education as the solution for the majority of industrial troubles. They also believed that training citizens was so important that it should not be left to boards of education or other educational institutions (Brandes, 1970, pp. 52-53).

To produce good, clear, sound-thinking citizens, providing a content and stable labor force, business believed that this required their involvement in employee education. Employers went so far as to sponsor company kindergartens and grammar schools, and they generally required workers' children to attend them. They stopped at the high school level. Many businessmen believed that, while a high school education induced students to seek employment elsewhere, employer-provided education would bind them to the company (Brandes, 1970, pp. 52-58; Foght, 1919, p. 9).

Object Lessons – The Factory as a School

Early manufacturers with lofty social ideals, who believed in the stewardship of wealth, expected and wanted an intelligent body of factory workers. Instead of looking to the schools, they envisioned the factories themselves as a means for uplifting the masses. Factories could be used not only for employment improvement, but they also gave employees a chance for education which they might not have otherwise (Fisher, 1967, pp. 26-30).

Welfare Programs Encompass General Education

Welfare program features encompassing recreation and educational features gave employees the opportunity to participate in general education programs. (See Appendix D.) Numerous examples included auditoriums used for entertainment, lectures, social occasions and concerts, facilities containing music and reception rooms, reading rooms, libraries, concert halls, and classes in a variety of subjects such as literature, music, and other topics of interest and value to employees.

Railroads and General Education

The railroads saw themselves as having extraordinary opportunities to throw around their employees the environment and stimulus for thrift, temperance, manliness, culture, and refinement. They saw their collecting premiums for insurance or managing local insurance funds with employee contributions as teaching employees thrift. Other forms of general education used by the railroads were reading rooms, lectures, and literary entertainments. They also placed a premium on the general education, culture, and moral rectitudes of individual employees by giving preferential treatment, other

things being equal, to these qualities (Report of the Commissioner of Education for the Year 1889-1890, p. 924).

The railroads described another form of instruction as being discipline. The American Society of Railroad Superintendents (1897) explained, "Discipline, as applied to railway service, is that method of education, government, instruction, which causes and maintains efficiency and loyalty on a railway, under a system of discipline administered by the officer, the officer is the teacher and in a sense the leader, and the employees are the disciples under discipline" (Report of the Commissioner of Education for the Year 1889-1890, p. 902). Discipline was applied to educate employees, not as punishment. Methods of discipline for education included issuing laws and regulations, the exercise of authority in the form of reprimand, fines, suspensions, and dismissal, and posting the records of good and bad deeds for the information of all employees (Report of the Commissioner of Education for the Year 1889-1890, pp. 902-903).

PROFESSIONAL DEVELOPMENT

Professional development, education providing the knowledge and expertise to enable workers either to be promoted to supervisory and management positions or to improve the effectiveness of employees currently holding such positions, received minimal attention prior to World War I. Until the late 1800s and early 1900s, practical education was considered to be the preferred education for higher-level businessmen. Business opinion ran heavily against professional development, claiming that formal education was not necessary for success.

Of the eminent businessmen listed in Who's Who in America in 1900, 84 percent had not been educated beyond high school. The contention was that the businessman who had the right personal qualities would have little difficulty in developing the necessary managerial skills, but that no amount of skill or knowledge could compensate for a lack of the essential personal qualities (Wyllie, 1954, pp. 32, 40-48). In the earlier days of commerce, qualities such as frugality, industry, punctuality and integrity had been seen as the attributes necessary for success; in the new industrial order positive attributes were considered to be hustle, ambition, dedication to the job, and the willingness to take risks and strike out along new paths (Kirkland, 1961, p. 408). This conviction went even further, contending that higher learning for business leaders was positively harmful in that it 'unfitted' men for business. This was based upon the belief that higher learning through its emphasis upon the development of mental facilities actually stamped out the right personal qualities, that the classical curriculum was impractical and remote from everyday life, and that it consumed the most valuable years of a young man's life in which he could be learning the actual ways of business (Kirkland, 1990, pp. 86-87; Wyllie, 1954, pp. 95, 102-105).

Education for Foremen

The success of the new business plants depended heavily upon the ability of the superintendent and his subordinates, especially the foreman. As critical as this position was, however, there were only limited educational efforts before World War I to define the foremen's responsibilities in a professional way, one reported exception being that for mining foremen. An industrial school for young working miners was opened in May 1879, at Drafton, Pennsylvania, for young miners who were aspiring to become foremen. The instruction, which was directly related to miners' work, was given in the evening except when mining operations were suspended. It was entirely free and a government report contended that the efforts of the school were seen " . . . in the improved manners and morals of the pupils" (pp. 29-30).

Another exception was the Foreman's Association (1903) of the Westinghouse Electric & Manufacturing Company. This foreman's group had the objective of promoting social events such as meetings, smokers and an annual banquet to benefit foremen by giving them the opportunity to form acquaintances with one another (Spring, 1972, p. 27).

Limited Internal Educational Arrangements

Business generally provided only limited education specifically intended to support and promote their supervisors and managers. Manufacturers and railroads did report that their foremen and other leading men had been brought up through the ranks of their apprentices. These included Baldwin Locomotive Works, Westinghouse Electric and Manufacturing Company, and Fore River Shipbuilding Corporation (NACS, 1914, p. 338). Graded apprenticeship was found on some railroads specifically organized to train apprentices with greater than average ability for foremanship and management. The Pennsylvania had a system of preferred apprentices which gave all of their present higher officials their education. Upon entering, they had to possess a diploma from some recognized technological school. The Southern Pacific set up a system of preferred apprentices in 1894 to obtain roadmasters, superintendents, and assistant engineers; and, the Baltimore and Ohio divided their apprenticeship into three grades -- the ordinary apprentice, the cadet and the cadet officer. These differences signified differing amounts of theoretical instruction required in the shop school (Diemer, 1910, pp. 281-284).

Learning through Experience

Management during the last quarter of the nineteenth century were primarily developed and educated in the employee of those who stood out and were an example for others, two predominant examples being John Patterson and Henry Ford (Jardim, 1970, pp. 198-233). Alvan Macauley, the president of Packard Motor Car Company, explained, "For a great many years Mr. Patterson conducted the greatest business university in America." Apparently Patterson's methods attracted

ambitious and capable men whom he very rapidly forced, either to the front or out the back door. The record of success among Patterson's National Cash Register. graduates, which included Henry Theobald, President of Toledo Scale Company, Jacob Oswald, President of Roto-Speed Company, Hugh Chalmers, and Thomas Watson, President of Computing-Tabulating-Recording Company, was purported by contemporaries as being higher than that of graduates of any collegiate institution. They all reported being fired for getting too powerful; and, they all controlled the companies which they subsequently founded or headed, generally using the same methods they had learned from Patterson (Crowther, 1923, pp. 231-263). Marquis, a former head of Henry Ford's Sociological Department, described the Ford executive scrap heap as men who were not discarded for inefficiency but rather for achieving phenomenal success. These members of what was labeled the Ford Alumni Association also went forward and successfully managed other business operations (Marquis, 1923, pp. 118-129).

Practical Experience vs. Formal Education

Even in the early 1900s there were still varying opinions regarding education for management. This lack of agreement was reflected by the 1914 proceedings of the NACS, which included a round table discussion of education for executives. Employers continued to promote practical education at this time, but they did include elements of formal education in their programs. While some employers suggested that executive ability could really only be discovered and best trained in the school of practical experience, other companies had established reference libraries, implementing a formal course of study within their organization, or paid tuition for external business courses (pp. 259-280).

In many organizations, by the 1900's, management had become an area demanding study and education. Only a few employers were willing to hire college graduates in 1890, but by 1900 many companies preferred college-educated managers. The Pennsylvania Railroad had just adopted regulations requiring all new executive position appointees to have college training in engineering and all officers aspiring to future promotion to possess some kind of college degree. The Cambria Steel Company told all young men entering the steel industry to get an education because without it there would be limited advancement (Wyllie, 1954, p. 110). The National Lamp Works of General Electric Company, Cleveland, reported (1906) they had begun to hire college men, who first entered the Engineering Department where they performed production work. They then took up positions of responsibility in other departments and divisions of the organization (NACS, 1914, pp. 389-403).

The rise of the business school was providing another source of ideas and training for managers. The Wharton School of Finance and Economy at the University of Pennsylvania led the way in 1881; others at the University of California and the University of Chicago followed after 1898 (Kirkland, 1990, pp. 98-99). An attempt in the late nineties by the New York Chamber of Commerce to finance business courses at Columbia University was not as successful; it was thwarted by the

faculty who contended that the real obligation was graduate work and research rather than professional teaching (Kirkland, 1990, pp. 200-202). That management as a profession was developing was also reflected by the founding of the Harvard Graduate School of Business Administration in 1908 (Cochran, 1957, p. 84; Lescohier, 1935, pp. 303, 308).

NEW ROLES EVOLVE TO SUPPORT EMPLOYER-PROVIDED EDUCATION

Prior to this period, the day-to-day relations with labor had probably been in the hands of the employer himself or his foremen. This included all phases of the employment function -- selection, training, wages, supervision, and discipline. Little attention was given to the systematic handling of employees (Korman, 1967, pp. 64-65; Nelson, 1975, pp. 61-65). In some instances managers themselves would administer employee-related programs; but, as their businesses expanded, they generally found that they had created new and often onerous administrative chores for themselves. Having neither the time nor the inclination to administer this new responsibility, they consequently hired individuals often known in the early years as social secretaries, welfare secretaries or welfare agents to be the point of contact between employees and management and to direct these day-to-day operations (Eilbert, 1959, p. 349; Nelson, 1975, p. 119; Boettiger, 1923, pp. 122-124).

New Practitioners and their Roles

Career-minded women were attracted to the new practice. At a time when most women were stenographers, clerks and factory hands, industrial welfare work was an opportunity to enter the all-male realm of management in large industries and businesses. The October, 1903, issue of *Woman's Welfare*, a periodical published quarterly by the women employees of the National Cash Register Company contained an article written by Fleda Griffith, one of the assistants of NCR's Welfare Department. The article described how the work of the social secretary was opening a new field for women and suggested, as others had, that the success of a social secretary depended upon her adaptation to the work and not upon special training (Griffith, 1903, pp. 237-238).

The earliest welfare workers, those such as Aggie Dunn and Lena Harvey were primarily humanitarians. H. J. Heinz' supported Aggie Dunn, as perhaps, the first welfare secretary, who, known as "Mother Dunn" hired, fired, checked on absentees, and counseled employees. Aggie Dunn, in her role as general forewoman of the Heinz's Home Plant girls, took a motherly role caring for the young female employees from the early 1880's until her death in 1924 (Albert, 1973, pp. 134-138).

To oversee activities at NCR, Patterson hired Lena Harvey, the local deaconess of the American Christian Church (1877) to live in a settlement house across from the factory to 'uplift' the company's employees by teaching and counseling them. Harvey, who saw herself as a missionary or diplomat called to the turbulent workplace to restore peace between management and labor, directed

the program for five years, preaching the moral importance of her work. Reportedly, employees resented her telling them the correct way to clean their homes, landscape their gardens, and raise their children; and, they complained they didn't want to participate in her work clubs (Tracy, 1950, pp. 96-178; Kryder, 1985, pp. 15-17).

One of the earliest and best-known of these more practical industrial reformers was Gertrude Beeks, a committed humanitarian. She had been employed as a stenographer by the Chicago Civic Federation and had served as the first president of both the National Association of Business Women and the National Association of Women Stenographers. Beeks, who was a close friend of Jane Addams, was active in the settlement house movement. She was hired by McCormick Harvesting Machine Company in 1901, assuming responsibility for the welfare of 5,500 men and women employees. She subsequently improved working conditions, negotiated a reduction of working hours for women employees, and worked to raise salaries and obtain paid vacation for all employees. Although Beeks had direct access to McCormick, she still had difficulty with lower level managers who balked at receiving her orders, were suspicious of her commitment to welfare, and dismissed her humanitarian attitudes. Unlike Harvey, however, she recognized the concerns of managers with production and profits and used business strategies to secure reform. She eventually earned the grudging acceptance of her opponents by addressing their concerns. She went on to be in charge of the National Civic Federation's welfare secretary consultation service disseminating information about the practice (Eilbert, 1959, p. 350; Jacoby, 1985, p. 59). Henry Bruere, who was also hired by International Harvester, had a background as a settlement house worker in Boston and as a leader in New York's municipal reform movement (Jacoby, 1985, p. 59).

Mary Barnett Gilson, a savvy business woman, yet humanitarian, was a Wellesley graduate who had social work experience before she began her welfare career (1913) at the 2,000-employee factory of the Clothcraft Shops of the Joseph and Feiss Company in Cleveland (Gilson, 1940, pp. 57-180). Gilson was an early advocate of Taylor's scientific management, believing that the source of most problems was poor management and that Taylor's approach would develop a fair management style. Her understanding of management principles enabled her to convince managers that humanitarian welfare services were good business, leading Joseph and Feiss to become an internationally recognized model of a humane yet highly productive enterprise (Kryder, 1985, p. 17).

Revered Samuel Marquis, Ford Motor Company's director of welfare work was committed to the Social Gospel movement. A friend of Ida Tarbell, a dedicated reformer and muckraker, Marquis avoided the term welfare and instead spoke of sociological or educational work. Ford had followed his minister's advice when he chose Marquis to direct the Sociological Department, one of the most celebrated of the day. The Five Dollar Day initiated in 1914 was tied to the welfare program. Eligibility for the program required not only productivity in the workplace but the ability to meet the Sociological Department's criteria. In the early days of the program, 160 department investigators

(Marquis called them advisers) interviewed Ford workers and visited their homes to determine whether they met the Ford code of good living (Kryder, 1985, pp. 17-19).

Clarence J. Hicks, a pioneering advocate of welfare programs began his industrial relations career in industrial welfare in the 1890s as a railroad secretary for the YMCA. And in 1911, he joined the staff of International Harvester to apply the lessons he had learned from the YMCA to a large manufacturing enterprise. He also worked at various times for Colorado Fuel and Iron, Standard Oil of New Jersey, and other companies (Brandes, 1970, p. 18; Hicks, 1940, pp. 42-43).

As with the practice, the labels for the practitioners were varied. Around the turn of the century, scientific welfare workers objected to the term 'social secretary' as being too narrow to include the scope and responsibility of their duties. Consequently, the Welfare Department of the National Civic Federation adopted the term 'welfare work' to describe the efforts of different establishments (Beeks, 1904, p. viii).

Practitioners' Backgrounds

Welfare secretaries were generally well educated and dedicated to public service, tending to have backgrounds in social and settlement work, municipal reform, or religion. Early welfare secretaries generally had backgrounds as teachers or nurses, or had experience in religious or philanthropic work. The men came from similar vocations having training as doctors or ministers. A contemporary reformer said that the common denominator in preparation for welfare work was an interest in improving the lives of working people, consistent with the employer's economic objectives. This may be why such workers were sometimes drawn from the ranks of the settlement house movement, the early purpose of these institutions being to improve labor conditions. When the Cone brothers, southern mill owners, determined that they wanted to employ one of the new social secretaries which Northern plants were using, they sent their choice, a graduate in domestic science, to New York, not only to visit plants which had social secretaries but also to see how training for settlement work was carried on (Herring, 1929, pp. 114-115). A contemporary explained, early in the century, that there could be no profession such as a social engineer or welfare secretary. Employers first needed to determine what they wanted to accomplish and then should employ a qualified person. No one science or art could be mastered for all the kinds of welfare work (Jacoby, 1985, pp. 59-61).

Qualifications recommended by the Welfare Department of the National Civic Federation included possessing tact, executive ability, common sense, acquaintance with local jealousies and sometimes with racial prejudices, and a knowledge of industrial subjects. They went on to describe how the welfare worker must recognize and in no way interfere with the authority of the superintendents. Rather, he must gain in advance the superintendents' full approval of each effort and use every proper method to enlist management's full cooperation. The new practitioners also needed

the patience to endure the slow realization of their plans (Beeks, 1904, pp. vii-viii). Others named personal qualities such as tact, common sense and the like as being necessary; and such backgrounds as "specialties as medicine, engineering, architecture, domestic science of trained nursing" as desirable for welfare workers (Eilbert, 1959, p. 350).

Welfare work was turning into an area requiring expertise and special competence. By using social work as a model of how paternalism could be fused with professionalism, welfare workers developed systematic methods for identifying and remedying employee problems. Like social workers, they took university courses in domestic science, psychology, and sociology. Their claim of competence in human relations became their rationale for their gaining status in the managerial hierarchy (Jacoby, 1985, pp. 60-61).

Training for Practice Evolves

Before the turn of the century, practically anyone with deep religious convictions capable of "infusing life and warmth into all" could become a YMCA railway secretary. However, as welfare programs became more complex, the YMCA began to demand more professional qualifications. By 1904, the YMCA was actively training welfare workers for their jobs (Strom, 1992, p. 122; Eilbert, 1959, p. 350). To carry out the education of new secretaries, the YMCA devised various schemes including publishing outlines of study, local association training classes, and summer schools. The first training school for YMCA secretaries, later to become known as Springfield College, opened as the School for Christian Workers in September, 1885, to train all kinds of lay workers including YMCA secretaries. It was followed by the Chicago YMCA Training School in 1890 (Hawkins, Prosser and Wright, 1951, p. 175). Companies including International Harvester, Colorado Fuel and Iron Company, and Standard Oil Company hired these secretaries to manage their welfare programs (Hicks, 1940, pp. 41-59).

Early in the twentieth century American universities began to train students in welfare practices. In 1906 the Chicago Institute of Social Science, an outgrowth of a social science school at the University of Chicago, offered courses in philanthropic and social work, including industrial welfare work. In the same year a class for industrial welfare workers was offered through the Chicago Commons, a West Side settlement house. In 1908 Yale University offered a class in industrial service work (Company papers, local newspapers, and periodicals cited by Brandes, 1970, p. 23; Ozanne, 1967, p. 169).

As a result of the criticism of scientific management as a narrowing influence in the shop, Joseph W. Roe, a professor of industrial engineering at Yale, started a program at Sheffield School (1910) to train engineers in "industrial service work." The idea caught on at other engineering schools and was also encouraged by the YMCA's Industrial Service Department which developed a curriculum covering such topics as handling employees, the human factor, elements of welfare work

and vocational guidance, trade union history and workers' standard of living. The industrial service programs included field work designed to give engineering students contact with and sympathy for the working classes (Jacoby, 1985, p. 101).

By World War I, over 700 secretaries for the YMCA's railroad and industrial welfare work were aided by a large technical staff at national headquarters who prepared handbooks, published newsletters, and set up conferences. In addition to their training center on Lake George, they also held conferences at regional campgrounds to train their workers (Jacoby, 1985, p. 60).

Another pioneer in providing training for this developing profession was that of the Tuck School of Dartmouth College. This institution offered the first training program (1915) for employment managers (Harlow, 1916, p. 7).

Both Difficulties and Opportunities for New Practitioners

Welfare managers' values and sympathies, generally those of the reformers following the turn of the century, easily conflicted with those of factory foremen and other managers. Unlike other industrial reformers, they operated within industry and were paid by the very management they sought to reform. And, to make it more difficult, the workers whom they sought to befriend often suspected them of being industrial spies. They had to contend with criticism and suspicion from both sides as to their motives. While the programs were presented by management as a benefit for employees, they were in reality primarily instituted as a capital investment in the firm's operation. Intuitive employees realized the conflict and were naturally wary of the welfare worker implementing the programs (Kryder, 1985, pp. 15, 17).

Welfare workers also regularly encountered resistance from production managers and foremen, who resisted any interference with their control over their areas. These production men doubted that uplift activities could contribute to cost and speed, which was their emphasis. Gertrude Beek's hostile encounters with the plant superintendent at International Harvester eventually caused her to resign (Jacoby, 1985, p. 61). Henry Bruere, also experienced difficulty at International Harvester as a result of production men looking upon him as an outsider who undermined their authority. Those welfare workers, however, who could accept and work within a role which was subordinate to the production manager could actually influence change. As educators of the employees of production managers, welfare workers also became educators of the production managers. Line managers could be compelled to concern themselves with the human factor in the workplace because they were the liaisons between the company's employees and the welfare workers (Korman, 1967, pp. 87-109).

Early welfare workers, especially the dedicated humanitarian reformers with middle-class tastes and manners, possessed a measure of class fears and ethnic prejudice which undoubtedly colored their early work. When they attempted to help workers conform to the needs of the

workplace, including teaching them the best ways to live, there could be a strong undercurrent of social control and missionary spirit pervading their work. These well-intentioned reformers, who at times combined idealism and humanitarianism with class and ethnic prejudices, were capable of using whatever measures were necessary to control employees and have them adhere to their code of good living. At the same time, welfare workers who were attempting to control and mold the working class, were also capable of challenging unprincipled managers who took advantage of employees (Kryder, 1985, pp. 15-19).

Employee Activities Evolve into Specialized Areas within Business Organizations

Although the management function and specialization were developing within innovative corporations departmentalizing their staffs (Diemer, 1910; Chandler, 1977, pp. 381-454), there is little evidence before the turn of the century of the application of specialization to labor administration. Records reflect virtually no departments or functions within organizations solely for the purpose of educating employees. E.P. Allis Company of Milwaukee, which employed hundreds of workers by the 1800s, did not even keep formal time records. Foremen and timekeepers simply noted hours, wages, and piecework prices. Their first step toward making employee actions more systematic was in 1886 when they began to pay by check and keep payroll checks. In larger organizations, the clerk responsible for recording time worked and pay earned, among other duties, may also have been assigned some other duties having to do with the employment function. And, sometime around the turn of the century the terms 'employment agent' or 'employment clerk' began to be used to designate an individual involved with activities involving employees. While there were probably a few hiring offices in 1900 and welfare secretaries had been appointed to assist with the development of employees, it is doubtful that a personnel or industrial relations department existed at the end of the century (Eilbert, 1959, p. 346).

In the decade following the turn of the century, specialized, recognized areas or departments, not just individual positions, were established in companies to carry out this function. The National Cash Register Company was the first concern reported to concentrate their welfare activities under one roof, followed by the Westinghouse Air Brake Company (Lescohier, 1935, p. 319).

Many employers hired specific individuals for designated positions to head and fill departments responsible for industrial relations which either encompassed employee training and education or were specifically responsible for employee education. These departments were frequently referred to, in the fifteen years following the turn of the century, as employment departments, but other labels were applied as well such as Department of Human Relations (NACS, 1916, p. 354). The National Association of Corporation Schools recommended the creation of an educational or employment department, contending it was as necessary as the executive and administrative areas (NACS, 1914, p. 426; NACS, 1916, p. 676).

It was around 1910 to 1912 that personnel management emerged as a new discipline and was recognized by at least a dozen employers as a separately named function to be included among the major divisions of an organization (Milton, 1970, pp. 58-59; Seligman, 1934, p. 88; Cochran, 1957, p. 77; Nelson, 1975, p. 119). After 1910 International Harvester established a department of industrial relations; Allis-Chalmers compartmentalized its work into employment management, safety, sanitation, and welfare, and mutual benefit departments; and, other firms, such as Harley-Davidson Company and the Chain Belt Company and Falk Corporation, had similar but less elaborate programs (Korman, 1967, p. 180). Whatever they were labeled, they developed to fulfill the need and philosophy of management rather than in any institutionalized, systematic manner. If the Education Department was a separate area, they usually worked closely with the Employment Department or the area (if there was one) designated responsible for personnel.

The responsibilities of the areas varied no more than the names applied to those in charge -- Employment Manager, Personnel Manager, Industrial Relations Secretary, Employees Service Director, Labor Management, and even Welfare Manager. (Lescohier, 1935, p. 326) A department, such as the employment department of B. F. Goodrich Co., designated as one of the oldest employment departments (1900), initially concerned itself with processing new employees and keeping employment and pay records, and later expanded to other duties including employee training and education. Other welfare departments began with employment functions and later had their duties restricted to particular areas of employee development. The Plimpton Press established its Employment Department around 1910 primarily for hiring and record keeping but it gradually became responsible for improvement of the workforce (Jacoby, 1985, pp. 47-49). Another manufacturing firm had a welfare department in 1911 and an employment and service department in a 1917 account, yet the work described was similar (Eilbert, 1959, p. 351-353). The Remington Typewriter Company Labor Department was divided into two branches -- hiring, employment records, and general labor in one, and industrial betterment in the other -- allowing the company to hire both a good hiring boss and an experienced welfare man or sociologist (Diemer, 1910, p. 41).

The scope and direction of departments and functions were altered or changed, not the essence. It would not be until the beginning of World War I that employee activities, not only training and education, but also hiring, firing, and other activities, would gain such critical importance that most firms would have the impetus to centralize them under one function (Lescohier, 1935, p. 324).

Practitioners Organize

In the 1890s a group of welfare and charity workers in the New York area, the American Association for the Promotion of Profit Sharing, began to meet informally to exchange ideas on social and civic problems. Early in 1900 they added business leaders and political reformers to their group resulting in the first organized effort, the American Institute of Social Service in New York, to

promote the profession of the welfare worker (Lescohier, 1935, p. 319). This group was formed (1898) with the objective of promoting industrial betterment defined as, "various phases of improvement in the promotion of better relations between employer and employee" (Milton, 1970, p. 53). Early in 1900 they stimulated interest on the subject of Industrial Betterment by bulletins, lectures, and public meetings, and the issuing of a magazine called *Social Service*, devoted to welfare work in industry (Brandes, 1970, pp. 18-22; Goss, 1911, p. 13).

In 1904, the Welfare Department of the National Civic Federation (NCF) was formed in New York to define opportunities in the field (Goss, 1911, p. 13). Their first conference in New York in the same year to discuss, " . . . the purpose and scope of welfare work -- efforts to better the conditions under which employees work and or live -- and the methods of its practical application in several totally different industries" (Beeks, 1904, p. v). The purpose of the new department was announced: (1) to educate the public as to the real meaning and value of welfare work; (2) to interest employers not engaged in welfare work; and, (3) to maintain a central bureau for the exchange of experiences by employers engaged in welfare work. To accomplish these objectives the Welfare Department employed educational means such as holding conferences and distributing illustrated literature to employers. The bureau of exchange furnished employers with photographs, literature, and plans for welfare programs as well as advice upon failures or successes in such work (Beeks, 1904, p. xxv). At the initial meeting of the department in 1904, it boasted 125 members, two years later 250 members, and by 1911, 500 members (NCF, pp. 269-270). By 1914, there were fifty major employers, such as National Cash Register, International Harvester, and United States Steel, who were active in the NCF's welfare and safety work (Brody, 1980, p. 61-62). By this time, the Federation, as a result of its educational campaign, claimed much of the credit for progressive employers giving consideration to the conditions surrounding their employers (NCF, p. 269).

After 1910 there was increased interested in personnel relations. A Boston Employment Managers Association was organized by Meyer Bloomfield (1913) reflective of the growing awareness of the personnel function and its importance. The association originated with the idea that "building up a working force and dealing with men in their work was a job which had a real professional content, requiring humanitarian emphasis and scientific analysis to what had been in the past a sporadic hit-or-miss effort." There were at least seven such associations in existence by 1916 (Bloomfield, 1919, p. 10).

The National Association of Corporation Schools was organized in 1913 with three stated functions: (1) to develop the efficiency of the individual employee; (2) to increase efficiency in industry; and, (3) to influence courses of established educational institutions more favorable toward industry. Their objective, to assist businesses in the education of their employees by providing a form for interchanging ideas, and by collecting and making available data as to successful and unsuccessful plans, was stated in Article II, Section I of their constitution (NACS, 1914, p. 38).

As a result of its diversified members, the NACS provided a well-rounded perspective on employee training and education. NACS membership was not exclusively for businesses and their program managers and instructors. It also included individuals representing business enterprises interested in establishing programs, private business and trade schools, public schools and universities, the United States Navy, governmental agencies, the YMCA, International Correspondence Schools, and other societies (NACS, 1914, pp. 14-23). Rotating committees made up of various members studied and reported on various educational topics -- Public Education, Trade Apprenticeship Schools, Special Apprenticeship Schools, Accounting and Office Work Schools, Advertising, Selling and Distribution Schools, Safety, Hygiene and Co-operation, Vocational Guidance, Employment Plans Committees, and Allied Institutions.

SUMMARY AND CONCLUSIONS

In the decades following the Civil War, employers' influence and power allowed them to use crude methods such as the drive system to manage their workplaces. When this method did not prove satisfactory, they adopted other management strategies -- using technology to control production processes and tools, changing organizational structures, and incorporating new management methods. In combination with these methods, management experimented with educational programs as a means of solving workplace problems. Employers, who were hiring new employees to work in unfamiliar settings performing jobs requiring different skill sets, developed educational programs to acclimatize these workers to their new work environments and to train them to perform new jobs.

Business randomly provided a variety of training and educational programs for their employees. Basic education was provided primarily for factory operatives and semi-skilled employees, especially women. The same programs were generally not provided for the foreign born whom many employers felt were beyond help or to skilled workers who had the leverage to resist business paternalism. Employers extended skills training to semi-skilled and skilled employees, who were assuming the responsibilities of the newly created, more specialized positions in factories. Employers provided skills training by modifying traditional apprenticeship arrangements to fit their work environments, by experimenting with internal classes which they labeled corporate schools, and by simply allowing employees to casually pick up the necessary skills on the job. Business provided minimal education for professional development. Prior to World War I, business claimed that formal education was not only unnecessary but could be detrimental for success as a manager. Limited professional education was most frequently offered through advanced apprenticeship programs, intended for skilled employees with the potential to advance and for minor executives.

Rather than turning to external educational agencies, business stated their preference for providing education themselves. They invested time, dollars, and other resources in employer-provided education programs, an area where they had limited or no expertise. Employers contended that they preferred to conduct their own educational programs because they were the ones who could best do this job. They considered their outlay to be an investment which would be returned to them in the form of contented, obedient, productive employees.

The business contention that employers alone could properly educate employees is difficult to validate. First, business was only beginning to develop financial systems which could provide them with the data to substantiate this claim. This condition alone would have greatly increased the difficulty of early practitioners accurately tracking expenses and benefits to arrive at a return on their training investment. Modern business organizations have difficulty accurately assessing the benefits resulting from employee development programs. Controlling the many workplace variables which contribute to the success or failure of workplace education is extremely difficult, if not impossible. Second, when business appealed to external providers, such as public and private schools, to assume some of these educational responsibilities, they had a tendency to dictate rather than to confer. And, employers rarely reported their dictates being carried out to their satisfaction, giving them a rationale for their maintaining control of the process and the outcome. Educational programs intended to provide benefits for all participants -- employers, employees, and the community -- would have evolved from mutual input from the participants, not from business demands. Third, as a result of industrialization, employers had assumed ownership of the means and tools of production; and, their assuming ownership of employee education extended their control. Employers' paternalistic, militaristic, and driving management philosophies, tied to their control of employee education, allowed them to unilaterally control their work environments.

Employer-provided education did result in a new problem-solving practice emerging within business organizations. The new deliverers of these programs were generally well-educated individuals with backgrounds in social work, settlement houses, or religious or philanthropic work. Practitioners were drawn to the workplaces in part to ameliorate what they perceived to be the negative impact of industrialization upon employees. These new professionals, who may not have recognized business objectives for these ‘educational’ programs, were frequently in conflict with their position. Not only did the foremen resent them for usurping line responsibilities, but employees were frequently suspicious of their motives, and management was quick to withdraw support. It is not clear that early welfare workers understood that they were probably delivering programs, not to ‘save’ the workers, but as interventions for workplace problems created by employees who did not fit management’s model of the ideal employee.

The practice nevertheless evolved and expanded. This new profession developed alongside the evolution of the corporate form of business institution, which had reached its current form by around 1914. The development of the function within business organizations, however, was not consistent with that of other business areas such as finance, marketing, and operations. The practice, at least during this time period, was not to achieve status comparable to other functions within business organizations.